

Undermining our future

**A study of banks' investments in
selected companies attributable to
fossil fuels and renewable energy**

A Fair Finance Guide International case study

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Summary

Fair Finance Guide International (FFGI) started in January 2014 and is presently being implemented by coalitions of civil society organizations in Belgium, Brazil, Denmark, France, Netherlands, Indonesia, Japan and Sweden.¹ Its total of over 20 members aim to establish Fair Finance Guides (FFG) in each of these countries, following the example of the Dutch Fair Bank Guide. FFGI aims to publish a number of joint studies about the policy and practices of the assessed banks in the participating countries, so-called Flagship Publications. The first flagship study on Transparency was published in the beginning of 2015.² This current Flagship Publication outlines the trends in financing of 75 selected financial institutions towards selected companies engaged in fossil fuels (coal mining and oil & gas), renewable energy input equipment manufacturers (solar panels, concentrated solar power plants, wind turbine manufacturers, and geothermal power turbine and engineering companies), renewable energy projects and utility companies, over the period 2004-2014. Given the urgent need for an energy transition, this study thus assesses whether financing for this transition is on the right track.

The temperature on earth is the result of a balancing act between energy from the sun entering and energy leaving the earth's system. When the earth absorbs incoming energy it heats up. When it reflects the sun's energy, it avoids heating up, and when this energy is released back into space, the earth cools.

A number of factors can affect the earth's ability to maintain this balance. These include: variations in the sun's energy reaching earth, changes in the reflectivity of earth's surface, and changes in the greenhouse gas concentrations which affect the amount of heat retained by the earth's atmosphere. The latter two factors also affect each other.

Historical records show that climate changes naturally over time. Studies have found that prior to the industrial revolution, changes in global climate can be attributed to natural causes such as changes in solar energy, volcanic eruptions and natural changes in greenhouse gas (GHG) concentrations. However, recent climate changes can no longer be attributed solely to natural causes. In fact, climate changes since the mid-20th century is mostly explained through human activities.

Human activities since the industrial revolution around 1850, have contributed significantly to climate change by adding CO₂ and other heat-trapping gases to the atmosphere. These heat-trapping gases are known as greenhouse gases. As described above, the greenhouse effect, i.e. the effect of heat being retained by the earth's atmosphere, is one of causes of climate change. Therefore these increased greenhouse gas emissions are an increasing driver of the rising earth surface temperature. The primary human activity that affects the amount and rate of climate change is greenhouse gas emissions from the burning of fossil fuels for energy and transportation.

¹ Website: <http://fairfinanceguide.org>

² See: <http://fairfinanceguide.org/media/60730/joint-case-study-on-transparency-and-accountability-ffgi-150529-final.pdf>

In 2012, 81% of all GHG emissions globally were CO₂ emission. These emissions were mainly a result of the combustion of fossil fuels (coal, natural gas, and oil) for energy and transportation. 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.³ In the absence of an unprecedented change in the global use of fossil fuels, there is a serious risk that the world is on track for a 4–6 degree temperature rise by the end of the century, exceeding even the “worst case scenarios” outlined by the Intergovernmental Panel on Climate Change (IPCC).⁴ This could put up to 400 million people across some of the poorest countries at risk of severe food and water shortages by the middle of the century, with 25 million more malnourished children – the equivalent of all of the under-fives in the USA and Canada combined.⁵

The most effective way to reduce CO₂ emissions, and thus reduce the Greenhouse effect, is to reduce fossil fuel consumption. Many alternatives for fossil fuels already exist or are currently under development. As a result of efforts to reduce consumption of fossil fuels, the increase of emission of CO₂ slowed in 2012. The year-on-year increase in emissions was 1.1% compared to an annual average of 2.9% since 2000. This is a positive trend that must be enhanced.

When financial institutions provide financing to companies engaged in fossil fuels related sectors, and this financing is being used for the extraction or production of fossil fuels, these financial institutions can be said to be financing GHG emission. Thus by implication, financial institutions financing such business activities can be said to be financing climate change.

However, when financial institutions provide financing to companies active in renewable energy sources, which can also be used for the transport sector, these institutions can be said to be financing climate change mitigation.

In the past decade a growing number of financial institutions have been making commitments to increase the positive impact of their investments on the environment and reduce their negative impact. Among these is the commitment to reduce their impact on climate change, particularly through a reduction in investments in fossil fuel producing companies and an increase in investments in renewable energy sources.

Many financial institutions invest in both types of companies. Financial institutions have to spread their risk, and one of the ways they do so is by investing in a broad range of different sectors. Given the need to reduce fossil fuel consumption in order to mitigate climate change, it is then crucial that financial institutions, while still spreading their risk, increase their investment in renewable energy sources and decrease their investment in fossil fuels. The investments of today determine the world of tomorrow. Financing is what has to move first.

Financial institutions have a two-fold role in fostering the energy transitions. Firstly, it is in their engagement with utilities companies to encourage a significant shift in the use of renewable energy. Secondly, it is in their financing of renewable energy.

3 Carbon Tracker Initiative and the Grantham Research Institute (2013, April), *Unburnable Carbon: Wasted Capital and Stranded Assets*, p. 14.

4 Anderson, K. and D. Calverley (2014), *Avoiding Dangerous Climate Change: Choosing the Science of the Possible over the Politics of the Impossible*, Oxfam.

5 Nelson, G.C., 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.

Each coalition focuses their study on number of financial institutions in their countries. All of these banks are included in the study, so from Denmark, France, Belgium, Sweden, the Netherlands, Japan, Brazil and Indonesia. With duplicate financial institutions removed, this amounts to 56 financial institutions.

In addition to these 56 financial institutions, a further 19 international financial institutions were selected (according to the ranking of their total assets) in order to present the study as a global comparison of financial institutions and their investments related to climate change. In total 75 financial institutions are thus included in this study.

- **Methodology**

As mentioned above, 81% of GHG emissions are attributable to the consumption of energy. Of this, 40% of GHG emissions in the energy sector came from power generation. Coal mining is an input for power generation. Oil and gas are inputs both to power generation, and the transport sector, as well as other uses. All these sectors are considered to generally have a high environmental impact during the extraction phase, produce high levels of emissions, and are non-renewable sources of energy. This combination of factors classifies investment in these sectors as climate change inducing investments, or negative investments.

Other sources of energy are considered positive climate change mitigation investments. A determination of this is made on the basis of whether they can be considered a viable alternative to fossil fuels for energy used in power generation and transport through a consideration of the impact and emissions of the alternative source of energy. Alternatives that are considered to have low environmental and social impact, low emissions, and provide renewable sources of energy, were included in the study. In general, this study has focused on electricity supply technologies which have median life-cycle emissions of below 50 grams of CO₂ equivalent per kilowatt hour. When financial institutions invest in these sectors, they can be said to be financing climate change mitigation, thus making positive investments.

This research, this study focused on selected companies active in the sectors that are relevant to 65% of total GHG emissions in the energy sector and more than 53% of total GHG emissions.

The following sectors were selected:

- Power generation
- Oil and gas
- Coal mining
- Solar panel manufacturing
- Wind turbine manufacturing
- Geothermal energy utilization equipment manufacturers
- Renewable energy projects (solar, wind, geothermal energy)

The following sectors were excluded:

- Bioenergy (biofuel & biomass)
- Hydro power
- Nuclear power
- Tidal energy

In total 178 companies were selected, a further 540 renewable energy projects were researched.

The selected companies were often active in more than one sector. Power generation companies, for example, were also active in coal mining, or other sectors. A number of oil and gas companies were also engaged in renewable energy. Mining companies often mine for other minerals in addition to coal.

In order to take this into account segment adjusters were calculated for companies engaged in coal mining, oil and gas, and power generation. In other words, the proportion of the company's activities in relevant sectors was calculated on an annual basis for the period 2004-2014. These proportions were then used to estimate the financial contributions of financial institutions to either renewable energy or fossil fuels for financing that was not specifically earmarked for renewable energy or fossil fuels projects (i.e. shareholdings, and financing for working capital or general corporate purposes). For example, Oil Company A received a loan from Bank A in 2004 for US\$ 100 million. In 2004 the 98% of Oil Company A's assets were in oil, and 2% in other sectors not relevant to this study. US\$ 98 million was attributed as fossil fuel investment by the financial institution. If, for example, Oil Company A also had assets in wind power, then this was attributed to renewable energy. Oil Company A received a loan from Bank A for US\$ 100 million in 2014. At this time, 95% of Oil Company A's assets were in oil, 3% in wind power, and 2% in not relevant sectors. Then US\$ 95 million was attributed to fossil fuels, US\$ 3 million to renewable energy, and US\$ 2 million was not included in the analysis.

When project finance was identified, this research investigated the purpose of the identified project finance to determine whether or not it fell within the scope of this research, and how to attribute it, i.e. as renewable energy or fossil fuels. If, for example, an oil and gas company attracted project finance for a wind farm then this was attributed to renewable energy.

This study provides the most exhaustive and recent information on the financing of the selected companies attributable to fossil fuels and renewable energy, and renewable energy projects, and their trends by selected financial institutions. However, due to the selection of companies, and availability of data on the details of the relations between financial institutions and their clients, particularly regarding bilateral financing, the actual levels of financing to both fossil fuels and renewable energy is higher than could be captured by this study.

- **Main findings for the 25 biggest financial institutions**

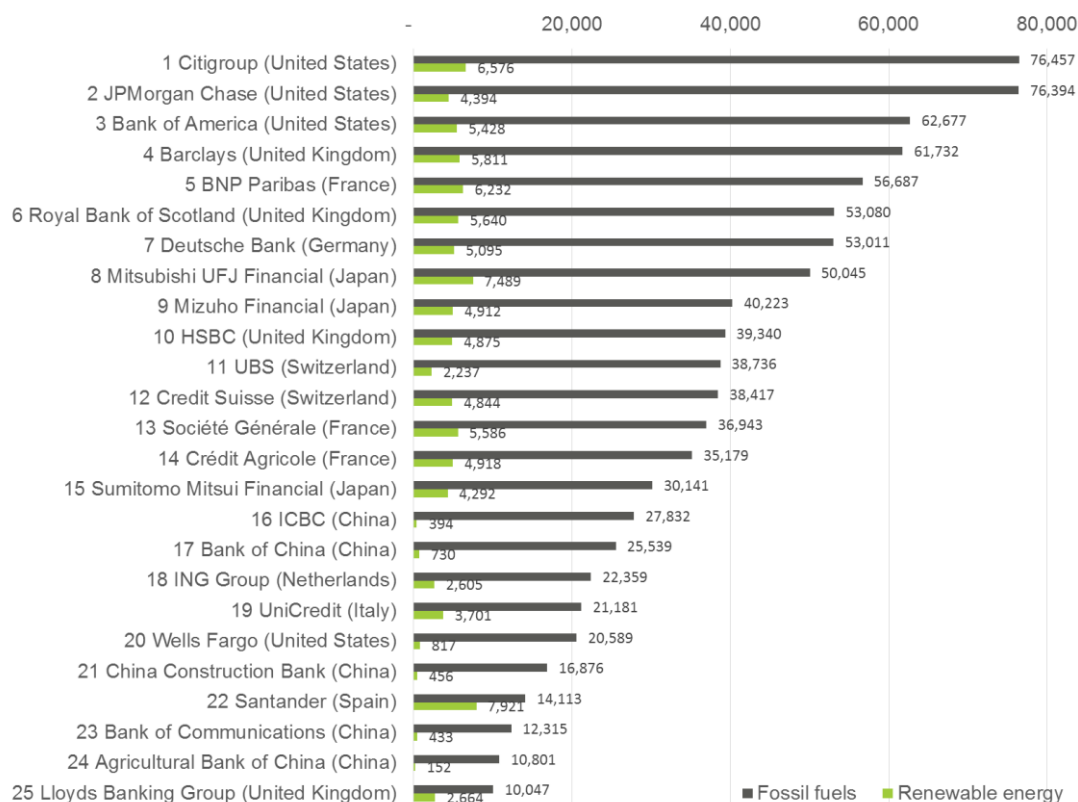
In total this study identified 14,164 transactions involving the top 25 biggest financial institutions and the selected companies and renewable energy projects. Since 2004, one year before the Kyoto Protocol came into force, the 25 biggest commercial banks have channelled at least US\$ 1,854 billion to the top fossil fuel industries and US\$ 171 billion to renewable energy. This figure only takes into account syndicated loans and underwriting activities to the selected companies, and renewable energy projects. This means that the financing of fossil fuel producing companies, and renewable energy companies is likely to be higher than could be captured by this study due to bilateral financing relationships.

In the second half of the period of study (2009-2014), the 25 biggest financial institutions increased financing of the selected companies attributable to renewable energy and renewable energy projects by 35% compared to the first half. However, at the same time, they also increased their funding to the selected companies attributable to fossil fuels by 1%. Financing of the selected companies attributable to renewable energy and renewable energy projects increased from US\$ 73 billion in the first half of the period 2004-2014, to US\$ 98 in the second half. However, this contrasts with the total value of financing of the selected companies attributable to fossil fuels, increasing from US\$ 923 billion, to US\$ 931 billion.

Figure 1 shows the ranking of the top financiers of the selected companies attributable to fossil fuels for the period 2009 to 2014. Zooming in on the most recent five years provides a more current picture of the financial activities of the selected financial institutions with regard to their financing of the selected companies attributable to fossil fuels and renewable energy. The top three places are all occupied by financial institutions from the United States. In the period 2009 to 2014, Citigroup and JPMorgan Chase each provided over US\$ 75 billion to the selected companies attributable to fossil fuels. In the same period they only provided approximately US\$ 5 billion in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects.

Figure 1 shows that this difference in financing of the selected companies attributable to fossil fuels and renewable energy, and renewable energy projects, is common to the vast majority of the top 25 financial institutions. None of the top 25 financial institutions provided more than US\$ 8 billion in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects in the period 2009-2014. In fact, only 9 of the top 25 financial institutions provided more than US\$ 5 billion in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects in the period 2009-2014. All the top 25 financial institutions, however, provided more than US\$ 10 billion in loans and underwriting to the selected companies attributable to fossil fuels. In fact, 16 provided more than US\$ 25 billion, and 8 provided more than US\$ 50 billion in loans and underwriting to the selected companies attributable to fossil fuels.

Figure 1 Ranking of the top financiers of the selected companies attributable to fossil fuels (loans & underwriting, US\$ mln, 2009-2014)

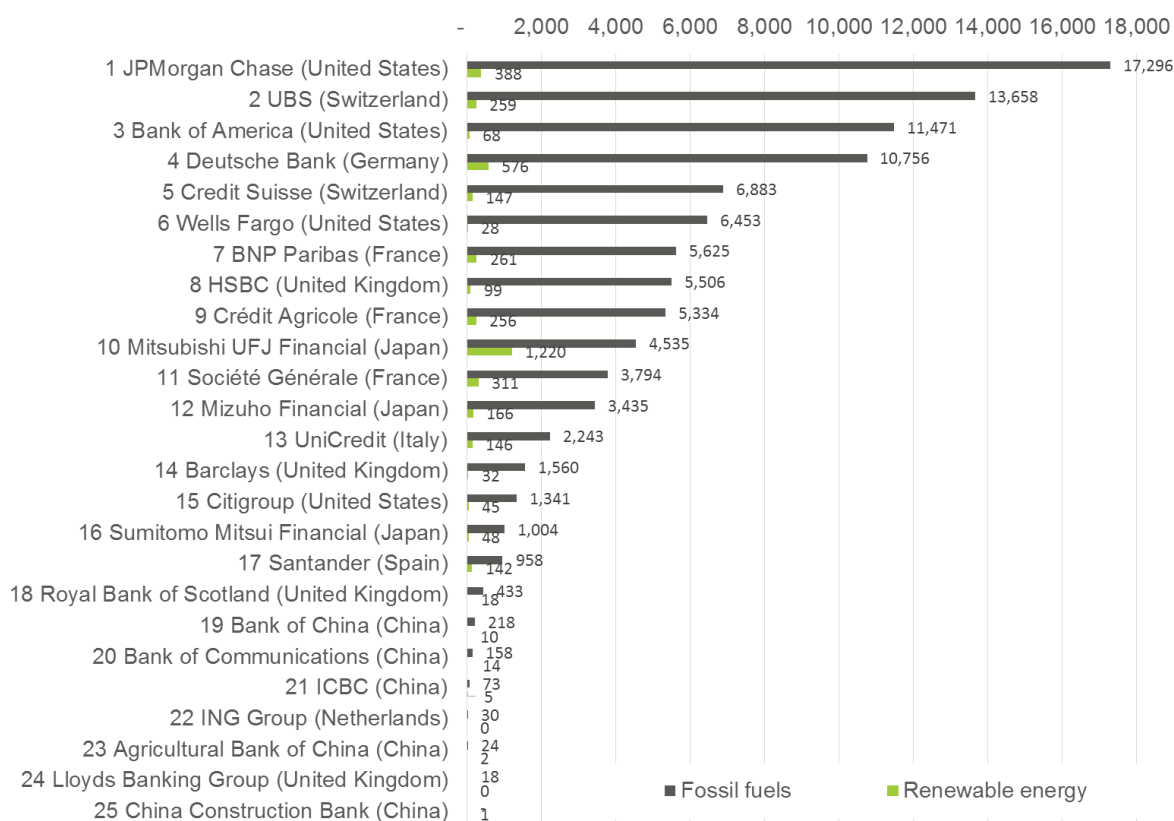


In terms of investments in shareholdings of the selected companies, the top 25 financial institutions invested on average US\$ 103 billion annually in selected companies attributable to fossil fuels. This compares with average annual investments of US\$ 4 billion in selected companies attributable to renewable energy.

Figure 2 provides a ranking of the top 25 financial institutions on the basis of their average annual investments in the selected companies attributable to fossil fuels in the period 2009-2014. JPMorgan Chase, UBS and Bank of America occupy the top three positions with the highest average annual investments in selected companies attributable to fossil fuels. All three financial institutions invested on average more than US\$ 11 billion in the selected companies attributable to fossil fuels annually in the period 2009-2014. Only 9 financial institutions had average annual investments in the selected companies attributable to fossil fuels below US\$ 1 billion.

Figure 2 also shows that this huge gap between average annual investments in the selected companies attributable to fossil fuels and renewable energy is common to all the top 25 financial institutions. Only one financial institution had an average annual investment in renewable energy of over US\$ 1 billion, Mitsubishi UFJ Financial. Only one other financial institution had an average annual investment of over US\$ 0.5 billion, Deutsche Bank. The third largest investor in fossil fuels, Bank of America, only had an annual investment in renewable energy of US\$ 68 million in the period 2009-2014.

Figure 2 Ranking of the top average annual investors in the selected companies attributable to fossil fuels (US\$ mln, 2009-2014)



- **Main findings for the 75 financial institutions**

The main findings of the study regarding the 75 financial institutions are summarized below:

- **No commitments**
This study found that many of the researched financial institutions did not have climate change mitigation policies or commitments in place.

- **Meaningless commitments**
An increasing number of financial institutions have commitments to mitigate climate change. A number have special policies, investment guidelines, and even foundations meant to finance research into climate change. Financial institutions have started issuing green bonds, and offering 'sustainable' products to their customers. However, all of these efforts are rendered completely futile if there is still an increase in financing of fossil fuels.

It is likely that a proportion of the attracted financing is being used by fossil fuel companies for research and development to reduce their harmful impact on the environment. The question is what proportion is actually being used by these companies for this purpose and how much is being used to explore, extract, process and commercialize the harmful hydrocarbons that lead to global warming and environmental and social disaster.

- **Slow increase in renewable energy capacities**
In the 10 year scope of this study the total installed capacity attributable to renewable energy of the selected utilities companies globally and in the coalition partner countries (see list in Appendix 1) had still not exceeded 10%. In 2014 more than 60% of the total installed capacity was for power generation based on fossil fuels, less than 10% for power generation based on renewable energy, with the remaining 30% of the capacity for power generation based on energy inputs not included in the scope of this study.
- **Increase in financing of renewable energy undermined**
In the second half of the period of study (2009 -2014), the 75 selected financial institutions provided 26% more total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects, compared to the first half. However, they also provided 1.5% more total loans and underwriting to the selected companies attributable to fossil fuels in the second half of the period of study compared to the first. Total loans and underwriting to the selected companies attributable renewable energy and renewable energy projects increased from US\$ 95 billion in the first half of the period 2004-2014, to US\$ 119 billion in the second half. However, this contrasts starkly with the total value of loans and underwriting to the selected companies attributable to fossil fuels, which increased from US\$ 1,008 billion, to US\$ 1,023 billion.
- **Increase in proportions of financing to renewable energy undermined**
In the first half of period of study, 6% of the total financing to the selected companies and energy projects by the 75 selected financial institutions was attributable to renewable energy. 62% of the total financing was for fossil fuels. This implies a gap of -57% in favour of fossil fuels, i.e. the proportion of fossil fuels was much higher than renewable energy.

In the second half of the period of study, the proportion of total financing to the selected companies attributable to renewable energy and renewable energy projects increased to 8%. This seemingly positive, though marginal, achievement is undermined by the fact that the proportion of total financing to the selected companies attributable to fossil fuels increased to 65%. The negative gap of -57% was maintained. This difference is due to the reduction in financing attributable to the 'other' category, not included in the scope of this study.

- Differences between countries

There were significant differences in performance between the countries of this study. Financial institutions active in Sweden, Japan, Indonesia and the Netherlands, for example had the largest percentage increase in financing for selected companies attributable to renewable energy and renewable energy projects. Only financial institutions active in the Netherlands decreased their financing of selected companies attributable to fossil fuels and had the highest proportions of total financing to the selected companies attributable to renewable energy and renewable energy projects. Financial institutions active in Sweden had the highest increase in financing of the selected companies attributable to fossil fuels. Financial institutions active in Indonesia and Japan had the highest proportions of their total financing to selected companies attributable to fossil fuels. Financial institutions active in Belgium and France decreased the proportions of their total financing to selected companies attributable to renewable energy and renewable energy projects.

In terms of investments in shareholdings, financial institutions active in Belgium, Denmark, Japan and Sweden decreased the proportions of their total shareholdings in selected companies attributable to renewable energy. Financial institutions in the Netherlands are the only ones to decrease the proportion of their investments in selected companies attributable to fossil fuels.

- Differences between banks

There were notable differences between banks. This study includes a number of financial institutions that brand themselves as contributing to the environment and society. A number of financial institutions in this study are focused mainly on domestic markets. While yet other financial institutions are major international banks. The details of the differences are included in the report.

- **Recommendations from the Fair Finance Guide International network**

In order to reach an objective of a global warming index below 2°C, the financial institutions should reduce and phase out of fossil fuel, starting with coal. Consequently, banks and governments should implement the following recommendations.

- To the banks: Increase *and* Reduce; Calculate *and* Disclose; Publish *and* Commit
 - **Increase** financing of renewable energy sources at a much larger scale than today, and:
 - **Reduce and Phase Out** financing of fossil fuels, starting with coal. If financing of fossil fuels continues to increase it undermines any achievements made in the financing of renewable energy.
 - **Calculate and Disclose** the financed emissions associated with the loans and investments.
 - **Publish** global and detailed amounts of all annual financing to the energy sector by type of energy and support - direct financing, indirect, investments, issues of shares and bonds, and other financial advisory services, and:
 - **Commit** to phase out all fossil fuel financing and investments, whether by direct and indirect financing, starting with coal.

- To governments
 - **Adopt** legislation in order to evaluate, calculate and publish the financed GHG emissions of financial institutions and companies annually.
 - **Adopt** goals, policies and legislation to reduce the financing of these emissions consistent with international climate change.
 - **Adopt** policies and legislation for financial institutions to reduce and phase out their financing of fossil fuels, starting with coal.

Introduction

Fair Finance Guide International (FFGI) started in January 2014 and is presently being implemented by coalitions of civil society organizations in Belgium, Brazil, Denmark, France, Netherlands, Indonesia, Japan and Sweden.⁶ Its total of over 20 members aim to establish Fair Finance Guides (FFG) in each of these countries, following the example of the Dutch Fair Bank Guide. FFGI aims to publish a number of joint studies about the policy and practices of the assessed banks in the participating countries, so-called Flagship Publications. The first flagship study on Transparency was published in the beginning of 2015.⁷ This current Flagship Publication outlines the trends in financing of 75 selected financial institutions towards the selected companies attributable to fossil fuels (coal mining and oil & gas), renewable energy input equipment manufacturers (solar panels, concentrated solar power plants, wind turbine manufacturers, and geothermal power turbine and engineering companies), renewable energy projects and utility companies, over the period 2004-2014. Given the urgent need for an energy transition, this study thus assesses whether financing for this transition is on the right track.

In the past decade a growing number of financial institutions have been making commitments to increase the positive impact of their investments on the environment and reduce their negative impact. Among these is the commitment to reduce their impact on climate change, particularly through a reduction in investments in fossil fuels and an increase in investments renewable energy sources.

However, a number of issues persist and questions remained unanswered. Firstly, and most importantly, not all financial institutions have made commitments to reducing their impact on climate change. Secondly, the commitments have remained untested.

One way to test these commitments to reducing financial institutions' impact on climate change is to test whether they have been decreasing their investments in fossil fuels sources and increasing their investments in renewable energy sources.

This project assessed whether financial institutions were living up to their commitments to reduce their impact on climate change by reducing their investments in selected companies attributable to fossil fuels sources and increasing their investments in selected companies attributable to renewable energy sources.

A summary of the findings of this report can be found on the first pages of this report.

⁶ Website: <http://fairfinanceguide.org>

⁷ See: <http://fairfinanceguide.org/media/60730/joint-case-study-on-transparency-and-accountability-ffgi-150529-final.pdf>

Chapter 1 Background

1.1 What is at stake?

The temperature on earth is the result of a balancing act between energy from the sun entering and energy leaving the earth's system. When the earth absorbs incoming energy it heats up. When it reflects the sun's energy, it avoids heating up, and when this energy is released back into space, the earth cools.⁸

A number of factors can affect the earth's ability to maintain this balance. These include: variations in the sun's energy reaching earth, changes in the reflectivity of earth's surface, and changes in the greenhouse gas concentrations which affect the amount of heat retained by the earth's atmosphere. The latter two factors also affect each other.⁹

Historical records show that climate changes naturally over time. Studies have found that prior to the industrial revolution, changes in global climate can be attributed to natural causes such as changes in solar energy, volcanic eruptions and natural changes in greenhouse gas (GHG) concentrations. However, recent climate changes can no longer be attributed solely to natural causes. In fact, climate changes since the mid-20th century is mostly explained through human activities.¹⁰

Human activities since the industrial revolution around 1750, have contributed significantly to climate change by adding CO₂ and other heat-trapping gases to the atmosphere. These heat-trapping gases are known as greenhouse gases. As described above, the greenhouse effect, i.e. the effect of heat being retained by the earth's atmosphere, is one of causes of climate change. Therefore these increased greenhouse gas emissions are an increasing driver of the rising earth surface temperature. The primary human activity that affects the amount and rate of climate change is greenhouse gas emissions from the burning of fossil fuels for energy and transportation.¹¹

8 United States Environmental Protection Agency (n.d.), "Earth's temperature is a balancing act", online: <http://www.epa.gov/climatechange/science/causes.html>, viewed in March 2015.

9 United States Environmental Protection Agency (n.d.), "Earth's temperature is a balancing act", online: <http://www.epa.gov/climatechange/science/causes.html>, viewed in March 2015.

10 United States Environmental Protection Agency (n.d.), "Earth's temperature is a balancing act", online: <http://www.epa.gov/climatechange/science/causes.html>, viewed in March 2015.

11 United States Environmental Protection Agency (n.d.), "Earth's temperature is a balancing act", online: <http://www.epa.gov/climatechange/science/causes.html>, viewed in March 2015.

In 2012, 81% of all GHG emissions globally were CO₂ emission.¹² These emissions were mainly a result of the combustion of fossil fuels (coal, natural gas, and oil) for energy and transportation. 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.¹³ In the absence of an unprecedented change in the global use of fossil fuels, there is a serious risk that the world is on track for a 4–6 degree temperature rise by the end of the century, exceeding even the “worst case scenarios” outlined by the Intergovernmental Panel on Climate Change (IPCC).¹⁴ This could put up to 400 million people across some of the poorest countries at risk of severe food and water shortages by the middle of the century, with 25 million more malnourished children – the equivalent of all of the under-fives in the USA and Canada combined.¹⁵

The most effective way to reduce CO₂ emissions, and thus reduce the Greenhouse effect, is to reduce fossil fuel consumption. Many alternatives for fossil fuels already exist or are currently under development.¹⁶ As a result of efforts to reduce consumption of fossil fuels, the increase of emissions of CO₂ slowed in 2012. The year-on-year increase in emissions was 1.1% compared to an annual average of 2.9% since 2000.¹⁷ This is a positive trend that must be enhanced.

When financial institutions provide financing to companies engaged in fossil fuels related sectors, and this financing is being used for the extraction or production of fossil fuels, these financial institutions can be said to be financing GHG emission. Thus by implication, financial institutions financing such business activities can be said to be financing climate change.

However, when financial institutions provide financing to companies active in renewable energy sources, which can also be used for the transport sector, these institutions can be said to be financing climate change mitigation.

Many financial institutions invest in both types of companies. Financial institutions have to spread their risk, and one of the ways they do so is by investing in a broad range different sectors. Given the need to reduce fossil fuel consumption in order to mitigate climate change, it is then crucial that financial institutions, while still spreading their risk, increase their investment in renewable energy sources and decrease their investment in fossil fuels.

12 United Nations Framework Convention on Climate Change (n.d.), “Greenhouse gas inventory data – Comparisons by gas”, online: <http://unfccc.int/di/DetailedByGas/Event.do?event=go>, viewed in March 2015.

13 Carbon Tracker Initiative and the Grantham Research Institute (2013, April), *Unburnable Carbon: Wasted Capital and Stranded Assets*, p. 14.

14 Anderson, K. and D. Calverley (2014), *Avoiding Dangerous Climate Change: Choosing the Science of the Possible over the Politics of the Impossible*, Oxfam.

15 Nelson, G.C., 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.

16 United States Environmental Protection Agency (n.d.), “Overview of Greenhouse Gases”, online: <http://www.epa.gov/climatechange/ghgemissions/gases/co2.html>, viewed in March 2015.

17 PBL Netherlands Environmental Assessment Agency (2013, October), *Trends in Global CO₂ Emissions: 2013 Report*, The Hague: PBL Netherlands Environmental Assessment Agency, p. 4.

1.2 International initiatives

The climate problem is global by nature and therefore requires an internationally coordinated set of answers. The world community is working on this: the 1992 UN Framework Convention on Climate Change (UNFCCC) and the corresponding 1997 Kyoto Protocol, are the two main international conventions on climate change. While a lot of initiatives have been taken, there are no binding engagements on emission reduction, no mechanisms set in place which show a clear path to global emission reductions.

The most important international standards concerning climate change are summed up below.

- **Setting measurable reduction objectives**

The *UNFCCC* formulates global objectives and principles and asks all member states to annually report their emission of greenhouse gases. Virtually all countries in the world take part in the *UNFCCC*, including the United States.

The *Kyoto Protocol* is based on the principles and objectives of the *UNFCCC* and establishes objectives and timelines for industrialised countries to limit their emissions. On average, the *Kyoto Protocol* demands an emission reduction (during the period 2008-2012) of 5.2% of the greenhouse gases in comparison to the level of 1990.

Although the *Kyoto Protocol* is a first step in reducing global emissions of greenhouse gases, scientists argue that the established reduction objectives are way too low to halt climate change, let alone undo it. To limit the global temperature increase to 2 to 2.4°C - which will anyway lead to drastic social, economic, and environmental problems - according to the IPCC, the annual global emission of greenhouse gases should be 50% lower in 2050 than in the year 1990, on average.¹⁸

In July 2008, a large group of international companies - including financial institutions like Citibank, Credit Suisse, Deutsche Bank, HSBC and Standard Chartered - advised the G8 government leaders to support such a reduction objective in a recommendation. This example was followed by the Corporate Leaders Group on Climate Change, an initiative of the Prince of Wales supported by the managers of almost 1,000 multinationals. In 2011, this group released the 2°C Copenhagen Communiqué in which the reduction objective is endorsed and advice is given on how to reach this objective.

In November 2009, also in the Netherlands, ten large Dutch financial institutions declared that they recognise the climate problem and support the reduction objective in a joint statement. In addition, the financial institutions have called upon the Dutch government to seriously stimulate sustainable energy. The financial institutions promise to pay more attention to sustainable energy projects in their financing and investments. In 2011, a group of 265 investors by means of 2011 Global Investor Statement on Climate Change, called upon governments to make clear choices so there would be more possibilities for large scale investments in projects that fight climate change.

18 Metz, B., O. R. Davidson, P. R. Bosch, R. Dave, L. A. Meyer (eds.) (2007), *Climate Change 2007: Mitigation of Climate Change – Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, IPCC, Cambridge/ New York: Cambridge University Press.

In December 2009, in Copenhagen the 15th United Nations Climate Change Conference was held. The aim of this conference was to reach a new agreement to replace the Kyoto Protocol, but this has not been achieved. The following year - on the 16th Climate Change Conference in Cancun - again no new agreement was reached. During the 17th Climate Change Conference in Durban, in December 2011, the countries agreed on a timetable for binding agreements that will take effect at the latest in 2020. The new treaty has to be ready in 2015. The Kyoto Protocol, which would have ended in 2012, has been extended, although not by all initial participants. The countries in the European Union will keep their objectives for 2020 of 20% CO₂.¹⁹

In preparation for future international climate agreements, policy to limit the emission of greenhouse gases has been developed on a national level. In the European Union, Australia, Canada, Japan, Russia and some states in the United States, companies in CO₂-intensive industries have to meet increasingly stringent rules and standards.²⁰ As with the developing countries such as China, these countries will introduce new rules to save fuel and limit CO₂-emissions in the transport industry.

There are also initiatives based on market mechanisms. Emission rights for greenhouse gases are traded on the Asia Carbon Global and the Chicago Climate Exchange (CCX) and the EU Emission Allowances (EUAs) of the European Union Greenhouse Gas Emissions Allowance Trading Scheme (EU ETS) are traded by different exchanges such as Climex. A report of Friends of the Earth US warns that the current proposal to regulate emission trading schemes, while necessary, is far from being sufficient to safeguard the environment or the technical and financial integrity of these new markets. Policy makers would have to design CO₂-markets as simply as possible.²¹

In 2013 the European Commission tried to improve the emission trading scheme, by selling less permits for example. This should lead to higher prices.²² The European Commission has also written a Green Paper which contains indicative aims for emissions which are no part of the emission trading scheme.²³

- **Measuring and reporting greenhouse gas emissions**

Globally, the standards of the Greenhouse Gas Protocol (GHG Protocol) are the most used standards to measure and manage greenhouse gas emissions. Besides the general measuring instruments for own activities, there are also sector specific guidelines and the GHG Protocol has developed a standard for the emissions of products and the corporate value chain. The GHG Protocol is consistent with the IPCC guidelines for reporting CO₂-emissions.

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- 19 Natuur & Milieu (n.d.), "Uitkomst klimaattop Durban erg mager", online: <http://www.natuurenmilieu.nl/nieuws/20111212-uitkomst-klimaattop-durban-erg-mager/>, viewed in March 2012.
 - 20 See, for an overview of different legislation on climate: Wellington, F. and A. Sauer (2005), *Framing Climate Risk in Portfolio Management*, Boston: World Resources Institute and CERES.
 - 21 Wellington, F. and A. Sauer (2005), *Framing Climate Risk in Portfolio Management*, Boston: World Resources Institute and CERES; Friends of the Earth US (2009, September 22), *Report warns on dangers in carbon markets*.
 - 22 Bos, J. en U. Jonker (2013, juli 4), "Brussel mag alsnog ingrijpen in markt voor emissierechten", *Financieel Dagblad*; Verdonk, M., C. Brink, H. Vollebergh, M. Roelfsema (2013), *Evaluatie van Opties om het Europese Emissiehandelssysteem te Hervormen*, Den Haag: Planbureau voor de Leefomgeving; Persson, M. (2013, February 3), "Arcelor verdient aan hete lucht", *Volkskrant*.
 - 23 Verdonk, M. en A. Hof (2013), *Indicatieve klimaatdoelen voor 2030 voor emissies die niet onder de Europese emissiehandel vallen*, Den Haag: Planbureau voor de Leefomgeving.

The Carbon Disclosure Project (CDP) is a coalition of institutional investors that asks the world's largest companies to release their annual emissions and other information on climate change. Since recently, the CDP acts as the Secretariat for the Climate Disclosure Standards Board (CDSB), established at the annual meeting of the World Economic Forum in 2007, as a response to the increased demand for standardised reporting guidelines for financial information related to climate change. The Climate Change Reporting Framework has been launched in September 2010.

The Asset Owners Disclosure Project (AODP) encourages asset managers to be transparent about the CO₂-emissions concerning their portfolios. In the first round of discussion of the AODP in 2013, only 19 out of the 1000 asset managers who were interviewed, made comments.²⁴

- **Switching to a low-carbon economy**

There are various initiatives within the corporate world and the financial industry to make agreements and to exchange experiences on stimulating the transition to a low-carbon economy:

- United Nations Environment Program Finance Initiative's (UNEP-FI) Climate Change Working Group (CCWG);
- the Investor Network on Climate Risk (INCR);
- the Institutional Investors Group on Climate Change (IIGCC);
- the Global Business Leadership Platform on Climate Change; and
- the Global Roundtable on Climate Change.

- **Shifts towards climate friendly technology**

The World Wildlife Fund (WWF) study Climate Solution shows that it is very probable that well-known alternative energy sources and technologies can be ready for use between now and 2050 in order to meet the predicted doubling of the global energy demand, provided that in the coming 5 years decisions will be taken to enable this. This development will ensure a reduction of 60 to 80% of the current CO₂-emissions, which is necessary to prevent hazardous climate change. This reduction can be achieved without the use of nuclear energy, non-sustainable biomass and non-sustainable types of hydropower.²⁵

The third part of the IPCC's 5th Assessment Report, published in April 2014, focused on mitigating, or avoiding, climate change, showed that the world must significantly reduce its reliance on fossil fuels in the coming decades. The IPCC projected that over the next two decades (2010 to 2029), annual investment in conventional fossil fuel technologies for electricity supply sector would decline, with a median projected rate of decline being around 20%. At the same time, annual investment in low-carbon electricity supply (including renewable energy, nuclear power and electricity generation with carbon capture and storage) is projected to rise by 100% compared to 2010 on the same median basis.

- **Emissions Performance Standards**

An Emissions Performance Standard (EPS) is a standard for power generation based on the level of carbon dioxide emissions produced per unit of energy, normally expressed in grams of carbon dioxide emitted per kilowatt hour of energy produced (gCO₂/kWh). Emissions Performance Standards have been introduced by governments, for example to impose limits on the level of emissions permitted for new power stations, and also by some

24 Scott, M. (2013, February 13), "Climate change influences investment risk", *Financial Times*.

25 Mallon, K., G. Bourne and R. Mott (2007), *Climate Solutions: WWF's vision for 2050*, Switzerland, Gland: WWF International.

financial institutions to screen out finance for power stations which do not meet their standard.

An example of the latter is the EPS introduced by the European Investment Bank (EIB), which is applied to all fossil fuel generation projects to screen out investments whose carbon emissions exceed a threshold level. This threshold has been set at a level which reflects existing EU and national commitments to limit carbon emissions. In the first instance the EPS has been set at 550gCO₂/kWh. This will rule out any further lending to regular coal and lignite power plants. The EIB agreed that the Emissions Performance Standard would be kept under review and that more restrictive commitments could be considered in the future.²⁶

- **Biomass for energy generation**

In 2007 a Dutch committee developed sustainability criteria for biofuels. These so-called Cramer Criteria were formalised in March 2009 as the NTA 8080:2009 Sustainability criteria for biomass for energy purposes.²⁷

In 2010, the Steering Board of the Roundtable on Sustainable Biomaterials (RSB) approved Version 2 of the principles and criteria for sustainable biofuel production, after three years of consultation with biofuels stakeholders. The RSB offers Global Standards that apply to any type of feedstock worldwide and EU- Renewable Energy Directive (EU-RED) Standards regarding land-use and GHG criteria that apply to feedstock entering the EU market.²⁸ The global RSB Principles are:²⁹

- Principle 1: Biofuel operations shall follow all applicable laws and regulations.
- Principle 2: Sustainable biofuel operations shall be planned, implemented, and continuously improved through an open, transparent, and consultative impact assessment and management process and an economic viability analysis.
- Principle 3: Biofuels shall contribute to climate change mitigation by significantly reducing lifecycle GHG emissions as compared to fossil fuels.
- Principle 4: Biofuel operations shall not violate human rights or labor rights, and shall promote decent work and the well-being of workers.
- Principle 5: In regions of poverty, biofuel operations shall contribute to the social and economic development of local, rural and indigenous people and communities.
- Principle 6: Biofuel operations shall ensure the human right to adequate food and improve food security in food insecure regions.
- Principle 7: Biofuel operations shall avoid negative impacts on biodiversity, ecosystems, and conservation values.
- Principle 8: Biofuel operations shall implement practices that seek to reverse soil degradation and/or maintain soil health.
- Principle 9: Biofuel operations shall maintain or enhance the quality and quantity of surface and ground water resources, and respect prior formal or customary water rights.
- Principle 10: Air pollution from biofuel operations shall be minimized along the supply chain.

26 E3G, (2013, July 24), *European Investment Bank Turns Away from Coal Financing as a New Emissions Performance Standard is Agreed*.

27 NEN, (2009, March 9), *Cramer Criteria voor Duurzame Biomassa Geformaliseerd*.

28 Roundtable on Sustainable Biomaterials (n.d.), "RSB Guidelines", online: <http://rsb.org/sustainability/rsb-tools-guidelines/>, viewed on 6 June 2014.

29 Roundtable on Sustainable Biomaterials (2013), "RSB Principles & Criteria for Sustainable Biofuel Production [RSB-STD-01-001 (version 2.0)]", Geneva: RSB.

- Principle 11. The use of technologies in biofuel operations shall seek to maximize production efficiency and social and environmental performance, and minimize the risk of damages to the environment and people.
- Principle 12. Biofuel operations shall respect land rights and land use rights.

The RSB standards are accompanied by a set of guidelines such as the RSB-Impact Assessment Guidelines and the RSB-Screening Tool.³⁰

In September 2013 the European Parliament voted in favour of regulation that reduces the obligation to blend biofuels to 6%. The European Parliament thus intends to reduce the CO₂ emissions of the cultivation for biofuel.

- **Procurement and supply chains**

Companies are often part of long production chains. They can monitor one another and question how they respect local and national legislation and international norms on climate change. The requirements that companies set for their suppliers can be included in contractual agreements. The importance of this also recognised in the OECD Guidelines for Multinational Enterprises since its revision in 2011.

Also the ISO 26000 guideline recognises the importance of supply chain responsibility, because “the impacts of an organization's decisions or activities can be greatly affected by its relationships with other organizations.” A companies' sphere of influence includes relationships within and beyond an organization's supply chain.³¹

30 Roundtable on Sustainable Biomaterials (n.d.), “RSB Guidelines”, online: <http://rsb.org/sustainability/rsb-tools-guidelines/>, viewed on 6 June 2014.

31 ISO (2010, November), *ISO 26000:2010 Guidance on Social Responsibility*.

Chapter 2 Methodology

2.1 Approach

This flagship publication assess whether selected financial institutions under the scope of the *Fair Finance Guide International* and an additional 19 major international financial institutions have been investing more in renewable energy sources or fossil fuels sources.

This research carried out the following research activities in order to meet the research objective:

- development of methodology;
- methodology sent for feedback from FFGI-coalition partners;
- adjustment of methodology;
- selection of additional financial institutions beyond those in countries with FFGI coalitions;
- methodology sent for feedback from financial institutions;
- adjustment of methodology;
- selection and capacity analysis of power generation companies;
- selection of companies in renewable and fossil fuels source- sectors;
- financial data collection;
- financial data sent for verification by financial institutions;
- adjustment of dataset on basis of responses from financial institutions;
- identification of financial institution policy commitments;
- financial data analysis;
- write final report.

2.2 Selected financial institutions

The *Fair Finance Guide International* consists of coalitions of the civil society organizations from eight countries. Each coalition focuses their study on a number of financial institutions in their countries. All of these banks are included in the study. With duplicate financial institutions removed, this amounts to 56 financial institutions.

In addition to these 56 financial institutions, a further 19 international financial institutions were selected (according to the ranking of their total assets) in order to present the study as a global comparison of financial institutions and their investments related to climate change. In total 75 financial institutions are thus included in this study.

Table 1 provides an overview of the number of financial institution selected for the study per FFG coalition and 19 international financial institutions. This group of 75 financial institutions includes the top-25 financial institutions globally on the basis of total assets. A ranking of the world's top 25 banks on the basis of total assets was then made using the Bloomberg equity screener. The top 25 banks are highlighted as a separate category for the detailed analysis necessary in the report.

Table 1 Number of financial institutions per coalition

Country	Number
Belgium	10
Brazil	6
Denmark	7

Country	Number
France	5
Indonesia	11
Japan	7
Netherlands	10
Sweden	7
International	19
Total	75

Table 2 provides an overview of the selected 75 financial institutions. Coalition country refers to FFG coalition country that selected a particular financial institution due to that financial institution's presence in the coalition country.

Table 2 Selected financial institutions

Financial institution	Coalition country
ABN Amro	Netherlands
Aegon	Netherlands
Agricultural Bank of China	International, Top 25
Arbejdernes Landsbank	Denmark
Argenta	Belgium
ASN Bank	Netherlands
Banco Bilbao Vizcaya Argenta (BBVA)	International
Banco do Brasil	Brazil
Bank of America	International, Top 25
Bank of China	International, Top 25
Bank of Communications	International, Top 25
Barclays	International, Top 25
BCA	Indonesia
Belfius	Belgium
BNI	Indonesia
BNP Paribas	Belgium, France, Top 25
BPCE	France
Bradesco	Brazil
BRI	Indonesia
Caixa Economica Federal	Brazil
China Construction Bank	International, Top 25
CIMB	Indonesia
Citi	Indonesia, Top 25
Crédit Agricole	France, Top 25
Crédit Mutuel CIC	France
Credit Suisse	International, Top 25

Financial institution	Coalition country
Danamon	Indonesia
Danske Bank	Denmark, Sweden
Delta Lloyd	Netherlands
Deutsche Bank	Belgium, Top 25
Handelsbanken	Sweden
HSBC	Brazil, Indonesia, Top 25
Industrial and Commercial Bank of China	International, Top 25
ING	Belgium, Netherlands, Top 25
Intesa Sanpaolo	International
Itau Unibanco	Brazil
Japan Post Group	Japan
JPMorgan Chase	International, Top 25
Jyske Bank	Denmark
KBC	Belgium
Länsförsäkringar	Sweden
Lloyds Banking Group	International, Top 25
Mandiri	Indonesia
Mitsubishi UFJ Financial Group (MUFG)	Indonesia, Japan, Top 25
Mizuho Financial Group	Japan, Top 25
National Australia Bank	International
NIBC	Netherlands
Nordea	Denmark, Sweden
Norinchukin Bank	Japan
Nykredit	Denmark
OCBC-NISP	Indonesia
Panin	Indonesia
Rabobank	Netherlands
Resona Holdings	Japan
Royal Bank of Canada	International
Royal Bank of Scotland	International, Top 25
Santander	Brazil, Top 25
SEB	Sweden
SkandiaBanken	Sweden
SNS Bank	Netherlands
Société Générale	France, Top 25
Spar Nord Bank	Denmark
Sumitomo Mitsui Financial Group (SMFG)	Japan, Top 25
Sumitomo Mitsui Trust Holdings	Japan
Swedbank	Sweden

Financial institution	Coalition country
Sydbank	Denmark
Toronto-Dominion Bank	International
Triodos Bank	Belgium, Netherlands
UBS	International, Top 25
Unicredit	International, Top 25
Van Lanschot	Belgium, Netherlands
VDK	Belgium
Wells Fargo	International, Top 25

2.3 Selected companies

This section outlines the company selection process. A list of the selected companies can be found in Appendix 1 .

2.3.1 Ownership forms

There are a multitude of different company ownership forms, from the one-man enterprise to the large stock listed multinational conglomerate. However, the majority companies can be separated into three distinct categories:

- Stock listed companies
- Privately-owned companies
- State-owned companies

- **Stock listed companies**

Stock listed companies, as the name implies, are listed on one or more stock exchanges. These companies issues shares which are then bought and sold by investors on the stock market. Not all shares of a company can be traded on the stock exchange. Promoters, company officers, controlling-interest investors, or the government, might own a significant proportion of the total shares of the company. The proportion of shares that can be traded is known as the free float or public float.

Shareholders of companies have a say in the running of the company. The magnitude of their influence depends on the size of their holdings, and whether they holding ordinary shares or non-voting shares.

Stock listed companies are subject to certain disclosure requirements. This means that they have to make company information publicly available as stipulated by the stock exchanges on which they are listed. This is in the interest of investors and potential investors as these disclosures allow them to have the appropriate degrees of information in order to evaluate their investments. Specific disclosure requirements vary slightly per stock exchange however, the degrees of disclosure are relatively similar.

- **Privately owned companies**

Privately owned companies can vary greatly in size from one man shops to large multinationals. However, they all have one thing in common: shares in these companies are not publicly traded. As such, privately owned companies are not subject to the same disclosure requirements as publicly listed companies. They are required to submit company filings to relevant government agencies, including financial statements, and changes in ownership. The specific requirements vary by country. The general public can gain access to these filings through the relevant government authorities.

- **State-owned companies**

State-owned companies can also take many forms. State-owned companies can be stock-listed companies where the controlling interest is held by the government. As such they are subject to the same disclosure requirements as other stock-listed companies.

State-owned companies can also be more similar to private enterprises. They may be owned by government agencies, departments or ministries. They must report on their activities and financial situation to the relevant government bodies. However, they do not necessarily need to publicly disclose such information.

There are different compositions of ownership forms per country and per sector. For example, state-owned companies are dominant in many sectors in China, particularly in natural resources. However, privately owned enterprises tend to dominate the information technology sector. Privately owned enterprises can sometimes grow to the point where they want to list on the stock exchange. As such, stock listed companies are active in a broad variety of sectors.

Given the different situations in the countries in the FFG coalition, and the sectors that will be analysed (as described below), the scope of this research includes all ownership forms. In the analysis consideration of the implications of different ownership forms on the results will be taken into account.

2.3.2 Selected sectors

As described in section 1.1, 81% of GHG emissions are attributable to the consumption of energy. Of this, 40% of GHG emissions in the energy sector comes from power generation, 25% from transport, and 15% from industrial manufacturing. When financial institutions invest in these sectors, they can be said to be financing climate change. This research, this study will focus on the sectors that are relevant to 65% of total GHG emissions in the energy sector and more than 53% of total GHG emissions.

Coal mining is an input for power generation. Oil and gas are inputs both to power generation, and the transport sector, as well as other uses. All these sectors are considered to generally have a high environmental impact during the extraction phase, produce high levels of emissions, and are non-renewable sources of energy. This combination of factors classifies investment in these sectors as climate change inducing investments, or negative investments.

In order to have an indication of positive climate change mitigation investments, a further four focus sectors were selected. This selection was made on the basis of whether they can be considered a viable alternative to fossil fuels for energy used in power generation and transport. The evaluation criteria considered the impact and emissions of the alternative source of energy. Alternatives that were considered to have low environmental and social impact, low emissions, and provide renewable sources of energy, were included in the study. In general, this study has focused on electricity supply technologies which have median life-cycle emissions of below 50 grams of CO₂ equivalent per kilowatt hour.

When financial institutions invest in these sectors, they can be said to be financing climate change mitigation, thus making positive investments.

The following sectors were selected.

- Power generation
- Oil and gas
- Coal mining
- Solar panel manufacturing
- Wind turbine manufacturing
- Geothermal energy utilization equipment manufacturers

The remainder of this section will provide further details as to why these sectors were selected, the scope of company selections, and the selection strategies. Section 2.3.3 will describe which sectors were not selected and the rationale for their exclusion.

- **Power generation**

Power generation accounts for 40% of all GHG emissions in the energy sector, and 33% of total GHG emissions in 2012 for countries party to the UNFCCC. As such, power generation constitutes the core sector of this research. All other sectors selected for this study are inputs in power generation and/or are inputs for energy used in the transportation sector which accounts for 25% of GHG emissions in the energy sector, and 21% of all GHG emissions in 2012 for countries party to the UNFCCC.

Power can be generated through a number of sources. Not all sources of power generation emit GHGs. Power generation sources include, but are not limited to, the following:

- Coal
- Oil
- Gas
- Solar
- Wind
- Geothermal
- Nuclear
- Hydro
- Biomass
- Tidal

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

Each electricity supply technology has a different life-cycle emission of CO₂. From the sourcing of materials or fuels, to construction, to operation and waste management, different electricity supply technologies emit different levels of CO₂. When emissions of all these processes are taken together, this is known as the life-cycle emissions. The IPCC has conducted a survey and assessment of different electricity supply technologies, and developed an overview of the life-cycle emissions, as shown in Table 3. 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 used as a basis to include or exclude sectors in this study.

Table 3 Life-cycle emissions of electricity supply technologies, including abated effect (gCO₂eq/kWh)

Current commercially available technology	Minimum	Median	Maximum
Coal – pulverized coal	740	820	910
Gas – combined cycle	410	490	650
Biomass – cofiring	620	740	890
Biomass – dedicated	130	230	420
Geothermal	6.0	38	79
Hydropower	1.0	24	2,200
Nuclear	3.7	12	110
Concentrated Solar Power	8.8	27	63
Solar PV – rooftop	26	41	60
Solar PV – utility	18	48	180
Wind onshore	7.0	11	56
Wind offshore	8.0	12	35

Source: Intergovernmental Panel on Climate Change (2014, March), *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.

This research developed a list of the 25 largest power generation companies globally on the basis of their total installed capacity. Trade journals, company reports, industry reports, and equity screeners were used.

Additionally, lists of power generation companies that account for 75% of the domestic market of the FFG coalition countries were developed. Trade journals, company report, and industry reports were again used to develop these lists.

For each power generation-company the composition of their total installed capacity, broken down by energy source, as described above, between 2004 and 2014 was compiled. This data was used as an input for the financial analyses. It allowed for changes in energy source composition to be reflected in changes in financing trends.

This study was not able to take into consideration a number of factors related directly and indirectly to power generation. Firstly, this study was not able to take into consideration the actual GHG emissions per power generation-company. This is due to the lack of data availability for a number of companies and countries to be included in the study. Some may argue that taking into account actual GHG emissions is crucial to the study. We would of course agree with this. However, in order to create a level playing field for analyses, this cannot be included due to a lack of relevant information for all the companies in the study.

Secondly, this study was not able to take into account the actual impact of each power plant of each power generation company in the study. This includes both fossil fuel burning power plants, as well as power plants using renewable energy sources. Large scale wind, solar farms, and hydro power plants, for example, can have a high impact on ecosystems although they are considered sustainable sources of energy. For this reason a number of renewable sources of energy have been excluded from the study (see section 2.3.3). These are generally considered to have a high impact on the environment, or there is a lack of consensus on the level of impact on the environment.

Thirdly, the process of manufacturing equipment for renewable energy sources, particularly for photovoltaic cells, can include the use of toxic chemicals. Additionally, as they are essentially electronic products, they contain elements that can be potentially harmful if not processed appropriately when disposed of. However, these issues are similar to those of the production of most electronic goods. The general consensus is that this potential impact is less than the overall benefit produced.

Fourthly, this research was not able to take into account the financing of companies engaged in research and development directed towards reducing the impact of existing energy sources, or developing new ones. Partly this is taken into consideration during the selection of included sectors. However, it is beyond the scope of this research to include technology companies.

Furthermore, financial institutions may have programs to support climate change mitigation that are not in the power generation or extractives sectors. HSBC, for example, has the Climate Partnership. These programs could ostensibly be making positive contributions to climate change mitigation. The programs and commitments will be included in the analysis as reference points. However, researching the scale and financing of these programs is beyond the scope of this research. This research will compare the existence of climate change mitigation commitments and programs to the investment trends. If a financial institution has a climate change mitigation program, but at the same time has increased its investment in non-sustainable energy sources, then it is working at cross purposes. This has an impact on the final evaluation of the financial institution.

Finally, power generated is used for a wide variety of purposes ranging from residential and commercial use to industrial use. The actual consumption of power might also be a cause of GHG emissions. However, the indirect GHG emissions from power consumption are beyond the scope of this study.

- **Coal mining**

Coal is used as an input for power generation which accounts for 40% of all GHG emissions in the energy sector, and 33% of total GHG emissions in 2012 for countries party to the UNFCCC. 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.³² 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 CO₂ equivalent per kilowatt hour. It is therefore considered a dirty source of electricity. Coal mining can 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.

A list of coal mining that together account for 75% of global production was developed on the basis of previous research, as well as industry reports.

- **Oil and gas**

Oil and gas is used in both the transport sector, as well as the power generation sector which accounts 40% of all GHG emissions in the energy sector, and 33% of total GHG emissions in 2012 for countries party to the UNFCCC. Oil and gas can also be used in other sectors and as inputs for other processes.

32 World Coal Association (n.d.), "Uses of coal", online: <http://www.worldcoal.org/coal/uses-of-coal/>, viewed in March 2015.

Additionally, as Table 3 shows, gas as an input for electricity generation has a median life-cycle GHG emission of 490 grams of CO₂ equivalent per kilowatt hour. While this is lower, than coal, it is still well above the threshold of this study of 50 grams of CO₂ equivalent per kilowatt hour. It is therefore considered a dirty source of electricity. Furthermore, oil and gas extraction can have negative impact 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.

A list of oil and gas companies that together were considered the most important actors in their relevant market was developed using Bloomberg industry reports.³³

- **Solar power equipment manufacturers**

Solar power is an alternative source of energy. Solar power can be derived from solar photovoltaic panels and from concentrating solar thermal power. Financing of companies active in the production equipment used in solar power, both solar panels and concentrating solar thermal power, can be said to be financing climate change mitigation.

As Table 3 shows, different sources of solar electricity have different levels of GHG emissions. Concentrated solar power has a median life-cycle GHG emission of 27 grams of CO₂ equivalent per kilowatt hour. Solar PV used by utility companies has a median life-cycle GHG emission of 48 grams of CO₂ equivalent per kilowatt hour. Rooftop solar PV have a median life-cycle GHG emission of 41 grams of CO₂ equivalent per kilowatt hour. Solar power is thus considered a clean source of electricity.

As mentioned above, the process of manufacturing photovoltaic cells, can include the use of toxic chemicals. Additionally, as they are electronic products, they contain elements that can be potentially harmful if not processed appropriately when disposed of. However, these issues are similar to those of the production of most electronic goods. The general consensus is that this potential impact is less than the overall benefit produced. Therefore, due to the low life-cycle emissions and the overall benefits outweighing the potential production and waste issues, solar power equipment manufacturers are included in this study.

A list of companies that together were considered leading producers of solar PVs, and concentrated solar power plants, was developed using REN21 publications and Bloomberg New Energy Finance.³⁴

- **Wind turbine manufacturers**

Wind power is an alternative source of energy. Financing of companies active in the production equipment used in wind power, can be said to be financing climate change mitigation.

As Table 3 shows, different sources of wind generated electricity have different levels of GHG emissions. Onshore wind power has a median life-cycle GHG emission of 11 grams of CO₂ equivalent per kilowatt hour. While offshore wind power has a median life-cycle GHG emission of 112 grams of CO₂ equivalent per kilowatt hour. Wind power is thus considered a clean source of electricity.

33 Bloomberg (2015, April 29), "Bloomberg industry market leaders: Exploration and production", Bloomberg, online: <http://www.bloomberg.com/visual-data/industries/detail/exploration+production>, viewed in April 2015.

34 Rodia, P. (2014, April), "PV module bankability 2014: Who to trust?", *Bloomberg New Energy Finance Solar Research Note*, p. 5; REN21 (2014 November), *Renewables 2014: Global Status Report*, Paris: REN21, p. 48, 50, 52.

A list of companies that together were considered leading producers of wind turbines was developed using REN21 publications.³⁵

- **Geothermal energy utilization equipment manufacturers**

Geothermal energy is an alternative source of energy. Financing of companies active in the production equipment used in geothermal energy generation, can be said to be financing climate change mitigation.

As Table 3 shows, geothermal energy has a median life-cycle GHG emission of 38 grams of CO₂ equivalent per kilowatt hour. It is therefore considered a clean source of electricity.

A list of major geothermal energy engineering companies and geothermal power plant operators was developed using REN21 publications.³⁶ It should be noted that three Japanese conglomerates, including Mitsubishi, are the largest producers of turbines used for geothermal energy. These large conglomerates are active in many different sectors, therefore, this research would need to calculate the proportion of their total activities that is relevant to geothermal energy (see section 2.7). This research attempted to gather the relevant data in company reports, company presentation, analyst reports, and financial database, in order to make this assessment. However, there was insufficient data to make this assessment. Given that these companies active in such a wide range of activities, and turbines for geothermal power represent only an insignificant proportion of their total activities, this research did not include these Japanese conglomerates.

- **Renewable energy projects**

In a number of countries the most significant drivers of a shift to renewable energy are not the major utility companies which account for the dominant share of national generating capacity. Rather, it is small and medium sized enterprises, and special purpose vehicles, focussed specifically on developing renewable energy projects. Given the relevance of these projects to this study on the trends of financing to renewable and fossil fuels sources, renewable-energy-project project financing was included in this study. Information available from *Bloomberg New Energy Finance (BNEF)* in *Bloomberg Terminal* was used to identify relevant projects, the involved financial institutions, and their commitments. Only deals that have been completed were included. Only renewable energy projects utilizing the energy sources included in the scope of this study, i.e. geothermal, solar and wind were included. The following types of financing were included:

- Bond
- Bridge financing
- Construction loan
- Development loan
- Mini-semi-perm loan
- Short term facility (revolvers & letters of credit)
- Term loan
- Tax equity
- Guarantees

35 REN21 (2014 November), *Renewables 2014: Global Status Report*, Paris: REN21, p. 59.

36 REN21 (2014 November), *Renewables 2014: Global Status Report*, Paris: REN21, p. 59.

Syndicated equity was to be included. A quick review of the available data from BNEF indicates that while in some instances this can be a significant source of financing, the participants are often not disclosed. For example, a US\$ 150 million solar project in Spain had over 1,150 equity stakeholders. None of these were named. Due to the low coverage of participants, syndicated equity was thus not included. The included types of asset financing generally have better coverage of participants.

The top 10 projects, in terms of value, per coalition country per year from 2004 to 2014 were included. Additionally, the top 25 projects per year between 2004 and 2014 globally that meet the above specified criteria were also included. Overlap occurred sometimes for two reasons. 1) Significant projects in a coalition country were also be in the top 25 globally. 2) A project was already included as it was developed by a (subsidiary of) power generation company already included in the study. In cases of overlap, the next project down the list was included.

2.3.3 Excluded sectors

As mentioned in section 2.3.2 a number sectors or sources of energy were excluded from this study. This decision was made on the basis of whether the source of energy could be considered a viable alternative to fossil fuels for energy used in power generation and transport. The evaluation criteria considered the impact and emissions of the alternative source of energy. Alternatives that were considered to have low environmental and social impact, low emissions, and renewable sources of energy, were included in the study. In general, this study has focused on electricity supply technologies which have median life-cycle emissions of below 50 grams of CO₂ equivalent per kilowatt hour. The remainder of this section outlines which energy sources were excluded and the rationale for this decision.

- **Nuclear**

Nuclear power is seen by some as a sustainable and clean source of energy. 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. Firstly, the safety of nuclear reactors is a concern. Although many countries have a good track record, there have also been incidents, and incidents have the potential to be disastrous. Additionally, there are concerns over what to do with spent wastes.³⁷

More 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.³⁸

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 the potential hazard of a serious accident.³⁹

As Table 3 shows, current estimations suggest that nuclear energy has a median life-cycle GHG emission of 12 grams of CO₂ equivalent per kilowatt hour. However, due to the potential negative impacts, and the consensus among coalition partners that nuclear power is not a viable alternative to traditional fossil fuels, it is not considered as an alternative.

37 Portney, P. R. (2005), "Nuclear power: Clean, costly and controversial", *Resources*, 2005(Winter): 28-30, 29-30.

38 Diesendorf, M. (2007, July), *Is nuclear power a possible solution to global warming?*, p. 5-6.

39 Greenpeace AND European Renewable Energy Council (2007, January), *Energy (R)evolution*, Amsterdam and Brussels: Greenpeace AND European Renewable Energy Council, p. 7.

- **Hydropower**

Hydropower is often considered a renewable source of energy, and an alternative to GHG emitting traditional fossil fuels. However, hydro power is often controversial. Hydro power projects, both large and small, have a significant impact on the environment, altering habitats, as well as having a potentially great impact on communities. Communities are often displaced and livelihoods are lost.

As Table 3 shows, hydropower has a median life-cycle GHG emission of 24 grams of CO₂ equivalent per kilowatt hour. It would therefore be considered a clean source of electricity. However, hydropower has a maximum life-cycle GHG emission of 2,200 grams of CO₂ 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 for 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 4 provides an overview of the different definitions of small-scale hydropower.

Table 4 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, R. Caceres Rodriguez, J.-M. Devernay, M. Freitas, D. Hall, Å. Killingtveit, Z. Liu (2011), "Hydropower", in O. Edenhofer, R. Pichs-Madruga, Y. Sokona, K. Seyboth, P. Matschoss, S. Kadner, T. Zwickel, P. Eickemeier, G. Hansen, S. Schlömer, C. von Stechow (eds), *IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation*, p. 450, Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press, pp. 437-496; WWF (2003), *Hydropower in a Changing World*, p.3.

Experts also suggest that the environmental impact per MW is dependent on the measures taken to mitigate the negative impact. It is beyond the scope of this research to investigate the per MW impact of each hydropower plant in the power generation portfolios of all selected electric utility 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 is derived from a number of sources. The term refers to biological matter than can be used as fuel. 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 as 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. This is why biomass is considered “carbon neutral.” As nothing offsets the CO₂ that fossil fuels produce, replacing fossil fuels with biomass is thought to result in reduced carbon emissions.⁴⁰

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 carbon the trees would have naturally stored if left untouched. This is particularly problematic as the majority of existing biomass power plants current use wood residue.⁴¹

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 CO₂ emissions) for eucalyptus monoculture development, land grab, and loss of livelihoods.⁴²

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. There are significant concerns including issues regarding food security, deforestation, legality of operations, human rights and labor issues, community displacement and land grabs, loss of livelihoods, the impact of monoculture on ecosystems, and soil degradation.⁴³

Due to these controversial issues regarding biomass and bio fuels, and the consensus among coalition partners that bio energy is not a clear-cut viable alternative to traditional fossil fuels it is not considered as an alternative in this study.

40 Cho, R. (2011, August), “Is biomass really renewable?”, *State of the Planet*, online: <http://blogs.ei.columbia.edu/2011/08/18/is-biomass-really-renewable/>, viewed in March 2015.

41 Cho, R. (2011, August), “Is biomass really renewable?”, *State of the Planet*, online: <http://blogs.ei.columbia.edu/2011/08/18/is-biomass-really-renewable/>, viewed in March 2015.

42 Ernsting, A., S. Bastable and O. Munnion (2013, October), *Biomass: The Chain of Destruction*, Biofuelwatch; Ernsting, A. (2012, September), *Sustainable Biomass: A Modern Myth*, Biofuelwatch.

43 Roundtable on Sustainable Biomaterials (2011, March), *RSB Principles & Criteria for Sustainable Biofuel Production*, Geneva: Roundtable on Sustainable Biomaterials; Oxfam (2012, September), *The Hunger Grains*, p. 2-3.

- **Tidal**

There are two methods of capturing tidal energy, namely, tidal stream generators and barrage tidal 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. According to the IPCC study, tidal energy is still considered a pre-commercial technology. The estimated median life-cycle GHG emission is 17 grams of CO₂ equivalent per kilowatt hour. However, as this technology is still pre-commercial, and the environmental and social impacts have not been sufficiently documented, tidal energy is not included in this study.

2.3.4 Final definition

Table 5 shows the final categorization of energy sources for this study. Renewable energy and fossil fuels are included in the financial analysis in this report. The category 'Other' is defined, but not included in the analysis.

Table 5 Energy source categorization

Renewable energy	Fossil fuels	Other
Geothermal power	Coal	Bioenergy
Solar power	Oil	Hydropower
Wind power	Gas	Nuclear power
		Tidal energy

2.4 Types of finance

Financial institutions can invest in companies through a number of modalities. Financial institutions can provide credit to a company. This includes providing loans and the underwriting of share and bond issuances. Financial institutions can also invest in the equity and debt of a company by holding shares and bonds. This section outlines the different types of financing, how they were researched and the implications for the study.

2.4.1 Corporate loans

The easiest way to obtain debt is to borrow money. In most cases, money is borrowed from commercial banks. Loans can be either short-term or long-term in nature. Short-term loans (including trade credits, current accounts, leasing agreements, et cetera) have a maturity of less than a year. They are mostly used as working capital for day-to-day operations. Short-term debts are often provided by a single commercial bank, which does not ask for substantial guarantees from the company.

A long-term loan has a maturity of at least one year, but generally of three to ten years. Long-term corporate loans are in particular useful to finance expansion plans, which only generate rewards after some period of time. The proceeds of corporate loans can be used for all activities of the company. Often long-term loans are 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.

This research will focus on syndicated loans rather than bilateral loans. Researching bilateral loans is more time intensive than syndicated loans, and the data availability will differ per company, country and sector. Syndicated loans tend to be of far greater value and used as long-term loans. Financial institutions tend to engage in syndicated loans in order to spread the risk among other financial institutions. Bilateral loans tend to be of lesser value and used as medium or short-term loans. The sectors under analysis are comparatively capital-intensive and are more reliant on long-term rather than short-term loans.

Nevertheless, financial institutions reading this report might respond that they provide more bilateral financing to renewable energy as the required values are lower and thus do not require syndication to spread the risk. This is bound to be true to a certain degree. However, these same financial institutions could also be providing bilateral loans to the selected companies attributable to fossil fuels as short-term working finance or finance or trade finance, injections for exploration, or mortgages on properties.

- **Project finance**

One specific form of corporate loan is project finance. This is a loan that is earmarked for a specific project. During the course of this research, the purpose of identified project finance will be investigated to determine whether or not it falls within the scope of this research, and how to attribute it, i.e. as a positive or negative investment. For example, if Company A receives project finance to build a coal-fired power plant, then this will be considered a negative investment. If Company A receives project finance to build a wind farm, then this will be considered a positive investment.

A separate category of renewable-energy-project project finance was included in this study. See section 2.3.2 for further details (a list of research renewable energy projects is included in Appendix 1).

- **General corporate purposes / working capital**

Often a company will receive a loan for general corporate purposes or for working capital. On occasion while the use of proceeds is reported as general corporate purposes, it is in fact earmarked for a certain project. As the majority of loans are generally for general corporate purposes or working capital, and the scope of companies under analysis is already very broad, it is not possible for this research to investigate to specific use of each identified loan. However, identified loans were subjected to calculations in order to attribute a renewable energy and/or fossil fuel investment value (see section 2.7).

This research analysed the above specified loan types for the period 2004-2014 (see section 2.5). Loans were researched using financial databases such as Thomson and Bloomberg. Renewable-energy-project project finance was researched using *Bloomberg New Energy Finance* data available through Bloomberg Terminal.

2.4.2 Share issuances

Issuing shares on the stock exchange gives a company the opportunity to increase its equity by attracting a large number of new shareholders or increase the equity from its existing shareholders.

When a company offers its shares on the stock exchange for 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 promote the shares and find shareholders. The role of investment banks in this process therefore is very important.

The role of the investment bank is temporary. The investment bank purchases the shares initially and then promotes the shares and finds shareholders. When all issued shares that the financial institution has underwritten are sold, they are no longer included in the balance sheet or the portfolio of the financial institution. However, the assistance provided by financial institutions to companies in share issuances is crucial. They provide the company with access to capital markets, and provide a guarantee that shares will be bought at a pre-determined minimum price.

As such, this research investigated the underwriting of equity issuances by the companies under analysis. This research analysed share issuances for the period 2004-2014 (see section 2.5). Share issuances were researched using financial databases such as Thomson and Bloomberg.

2.4.3 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 corporations. Like shares, bonds are traded on the stock exchange. To issue bonds, a company needs the assistance of one or more (investment) banks which underwrite a certain amount of the bonds. Underwriting is in effect buying with the intention of selling to investors. Still, in case the investment bank fails to sell all bonds it has underwritten, it will end up owning the bonds.

As such, this research investigated the underwriting of bond issuances by the companies under analysis. This will analysed bond issuances for the period 2004-2014 (see section 2.5). Bond issuances were researched using financial databases such as Thomson and Bloomberg.

2.4.4 (Managing) shareholdings

Banks can, through the funds they are managing, buy shares of a certain company making them part-owners of the company. This gives the bank a direct influence on the company's strategy. The magnitude of this influence depends on the size of the shareholding.

As financial institutions actively decide in which sectors and companies to invest, and are able to influence the company's business strategy, this research will investigate the shareholdings of financial institutions of the selected companies. Shareholdings are only relevant for stock listed companies. Not all companies in the study are stock listed companies. The company selection as described in section 2.3 has tried to take this into account by including the major companies in the relevant sectors. However, some ownership forms may dominate in certain sectors under analysis. Additionally, some ownership forms are more prominent in some countries (see section 2.3.1).

Shareholdings have a number of peculiarities that have implications for the research strategy. Firstly, shares can be bought and sold on the stock exchange from one moment to the next. Financial databases keep track of shareholdings through snapshots, or filings. This means that when a particular shareholding is recorded in the financial database, the actual holding, or a portion of it, might have been sold, or more shares purchased. Secondly, share prices vary from one moment to the next.

Given these peculiarities, this research analysed the investment trends of financial institutions in relation to the fluctuations in the average market capitalization of the selected companies. Market capitalization is the number of issued shares multiplied by the reported value of each share. Including market capitalization in the analysis thus provides indications of whether a financial institutions increase in shareholdings are the result of purchasing more shares or the fact that the value of shares has increased.

Shareholdings were analysed at quarterly filing dates for the period 2004-2014 (see section 2.5). Shareholdings were researched using financial databases such as Thomson.

2.4.5 (Managing) investments in bonds

Banks 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.

Bond holdings have a number of peculiarities that have implications for the research strategy. Firstly, bonds can be bought and sold from one moment to the next. However, these researchers do not have access to financial databases that keep track of changes in bond holdings through snapshots, or filings. Only the most recent bond holding information is available. This research is investigating investment trends therefore it would need to be able to analyse trends in bond holdings. However, as this is not available, bond holdings were not taken into consideration in this research.

2.5 Time period

Earlier research carried out by Profundo has found that the global economic crisis and oil prices have had an impact on the investments of financial institutions in renewable and fossil fuels sources. This current research therefore analysed financing trends for the period 2004-2014.

Observing a longer period has a number of important benefits. Firstly, it allows the research to identify the effect of the global economic crisis on investment patterns for non-renewable and renewable energy sources. Additionally, in many instances, it allows the FFG coalitions to place commitments of the financial institutions included in their programs in chronological perspective and to observe investments trends in relation to these commitments. For example, if a financial institution made a commitment to reduce its investments in drivers of climate change in 2006, then this is tested with the available data as not all financial institutions made such commitments at the same time, if at all.

2.6 Financial institution feedback

The selected financial institutions had two opportunities to provide feedback to this research. Firstly, all the financial institutions selected by the coalition partners had the opportunity to provide feedback on the research methodology. A number of the issues raised by financial institutions were incorporated into the methodology. Other issues were discussed and clarified with financial institutions.

The second opportunity for financial institutions to provide feedback was at the data verification stage. The collected data on financing, including estimates on the per-bank-contribution to a loan or underwriting (see section 2.7.1) for individual financial institutions, was sent to the relevant financial institutions in this study. The financial databases used to collect data on the financing provided to the selected companies and renewable energy projects is known to sometimes contain errors. To ensure the quality of this research, the collected data was sent to financial institutions for verifications. The responses from financial institutions generally fell in the following categories:

- **No response**

Approximately 50 of the 75 financial institutions did not respond.

- **No comment**

Of the financial institutions that did response more than 6 stated that client relationships are confidential and they could not verify the loans and underwriting data. They also stated that they do not 'in principle' comment on positions/investments in companies.

- **Comments on investments not clients**

The majority of the remaining financial institutions fell in this category. Though they could not comment on client relationships, or on the specific levels of investments, they could verify both the trends and the general magnitude of investments. 10 financial institutions reported that in order of magnitude the figures collected by the research were generally correct. One financial institution calculated that there was a deviation of not more than 1%.

- **Concerns with figures**

Two financial institutions reported errors in the data. These were corrected when details were given. The issues were raised with the financial database providers. Where the errors were addressed and corrected by the financial database providers these were adjusted in the data set. Where the errors were not addressed or not addressed before the report was written, the errors were removed if the error related to the magnitude of a position not being consistent with the trends or strategies of investments of the financial institutions.

- **Additions**

A number of the financial institution which fell into the above categories also provided additional information. This was only on the financing of renewable energy. Where this fell into the scope of the research, it was included.

2.7 Calculated elements

This research included a number of calculated elements necessary for the analysis. These are described in the following sections.

2.7.1 Financial institution financing contributions

- **Loans and underwriting**

Individual bank contributions to syndicated loans and underwriting were recorded to the largest extent possible. If the contributions per bank were known, these amounts were entered into the calculation. For loans and underwriting, the amounts financed per bank were estimated if individual bank contributions were not known. The estimates were based on the following rules of thumb:

- In the case of loans (corporate loans or revolving credit facilities), 40% of the total amount was committed by bookrunners and 60% by other participants of the syndicate. If, however, the amount of bookrunners was (almost) equal to, or higher than, the amount of participants, the reverse was used: 60% for the bookrunners and 40% for the arrangers. So if there were for example 5 bookrunners and 4 participants and the amount of the loan was US\$ 100, the estimate was that the bookrunners commit 60% (US\$ 12 each) and the participants 40% (US\$ 10 each). The amount provided by bookrunners was always higher than the amount provided by participants;
 - In the case of share- and bond issuances, 75% of the total amount was committed by bookrunners and 25% by other participants of the syndicate. The amount provided by bookrunners should always be higher than the amount provided by participants.
 - In the case of share- and bondholdings, the amounts were always known, so no estimate was needed.
- **Shareholding**
As described in section 2.4.4, this research focused on the number of shares, and changes in the holdings of these, in the period 2004-2014. As the number of shares held by financial institutions is known, they were not subject to adjustment.

2.7.2 Segment adjusters

Table 6 provides an overview of which energy sources this research considers renewable energy or fossil fuels. Section 2.3.2 described which sectors and included in the analysis. Selected companies were often active in more than one sector. Power generation companies, for example, were also active in coal mining, or other sectors. A number of oil and gas companies were also engaged in renewable energy. Mining companies often mine for other minerals in addition to coal.

When project finance was identified, this research investigated the purpose of the identified project finance to determine whether or not it fell within the scope of this research, and how to attribute it, i.e. as renewable energy or fossil fuels. If, for example, an oil and gas company attracted project finance for a wind farm then this was attributed accordingly.

For loans for general corporate purposes or working capital, sectors adjusters were calculated for companies active in the power generation, oil and gas, and mining sectors. It was beyond the scope of this research to calculate sector adjusters for companies engaged in the production of equipment for the utilization of renewable energy sources, apart from Abengoa, Acciona and Areva. However, companies active in these sectors tend to be more specialized in their sectors and less diversified, therefore adjusters were not crucial to maintain sound methodological outcomes.

Sector adjusters for power generation, oil and gas, and coal mining companies were calculated on the basis of the segment distribution of their total assets. In cases where no segment distribution of assets could be identified the following proxies were used in order of preference: segment distribution of costs, segment distribution of profits, or estimator based on company activity description. The segment distribution of assets, costs and/or revenues were often included in company filings or investor presentations. Adjusters were calculated annually for the whole period of study.

These adjusters were then multiplied by the financing and shareholding values for the relevant periods. For example, Oil Company A received a loan from Bank A in 2004 for US\$ 100 million. In 2004 the 98% of Oil Company A's assets were in oil, and 2% in other sectors not relevant to this study. US\$ 98 million was attributed as fossil fuel investment by the financial institution. If, for example, Oil Company A also had assets in wind power, then this was attributed to a renewable energy. If Oil Company A receives a loan from Bank A for US\$ 100 million in 2014. At this time, 95% of Oil Company A's assets were in oil, 3% in wind power, and 2% in not relevant sectors. Then US\$ 95 million was attributed to fossil fuels, US\$ 3 million to renewable energy, and US\$ 2 million was not included in the analysis.

2.7.3 Power generation adjusters

As described in section 2.3.2 power can be generated through a number of different sources. Some of these sources were included with the scope of this research others are not (see section 2.3.3). This methodology has stipulated which energy sources this research considers renewable, and which it considers fossil fuels (see sections 2.3.2 and 2.3.3). Table 6 provides an overview of the electricity sources that this research considers renewable energy or fossil fuels, i.e. with median life-cycle emissions of below or above 50 grams of CO₂ equivalent per kilowatt hour, and thus included in this research. It further provides an overview of the sources of electricity considered controversial and thus was not included in the research.

Table 6 Sustainable and unsustainable electricity sources

Renewable energy	Fossil fuels	Other
Geothermal	Coal – pulverized coal	Biomass – cofiring
Concentrated Solar Power	Gas – combined cycle	Biomass – dedicated
Solar PV – rooftop		Hydropower
Solar PV – utility		Nuclear power
Wind onshore		Tidal
Wind offshore		

As power generation companies have different compositions of power generation technologies, and these include both renewable energy and fossil fuels, this research compiled data on the composition of their total installed capacity, broken down by energy source, as described above, between 2004 and 2014. These compositions and changes therein were then used to estimate changes in financing trends.

Data regarding the composition of installed capacity, broken down by energy source, was gathered from industry sources, annual reports and relevant databases. Power source adjusters were then calculated for each company and subsequently multiplied with the asset adjusters for power generation. However, since companies often only provide recent information regarding their activities and not historical data, estimations need were made. Consequently, in order to estimate the missing information annually, the trend of the breakdown of the installed capacity by source was taken into account. More specifically, since the data can be treated as time series, regression analyses and the method of linear least squares were used in order to estimate the missing information. In case the trend function was not a good fit (R^2 was too low), other methods such as non-linear least squares were used.

These proportions were then multiplied by the financing and shareholding values for the relevant periods. For example, Power Company A received a loan from Bank A in 2004 for US\$ 100 million. In 2004 the generating capacity of Power Company A was 98% fossil fuels, 1% renewable energy and 1% other. US\$ 1 million was not included in the analysis. US\$ 98 million was attributed as fossil fuel investment by the financial institution, while US\$ 1 million was attributed as a renewable energy investment. To continue the example, in 2014 Power Company A again received a loan from Bank A for US\$ 100 million. However, in this period Power Company A had adjusted the composition of its generating capacity. In 2014 it stood at 50% fossil fuels, 48% renewable energy and 2% other. US\$ 2 million was not included in the analysis. US\$ 50 million was considered as a fossil fuel investment and US\$ 48 million was considered a renewable energy investment. Shareholdings were adjusted in similar way.

As mentioned in section 2.4.1, financial institutions can provide project finance and loans for general corporate purposes. The above adjuster was used for loans for general corporate purposes or working capital, and for underwriting. However, during the course of this research, the purpose of identified project finance was investigated to determine whether or not it fell within the scope of this research, and how to attribute it, i.e. as a renewable energy or fossil fuel investment. If project finance was identified for a coal-fired power plant then 100% of that financing was attributed to negative investments. However, if project finance was identified for a wind farm, then 100% of that financing was considered a renewable energy investment.

The implication of these calculations is of course that the financial institution is not solely responsible for the resulting trends. As power generation capacity compositions change so do the financing trends. However, financial institutions can urge power generation companies to adjust the generating capacity compositions, or only provide project finance for sustainable energies.

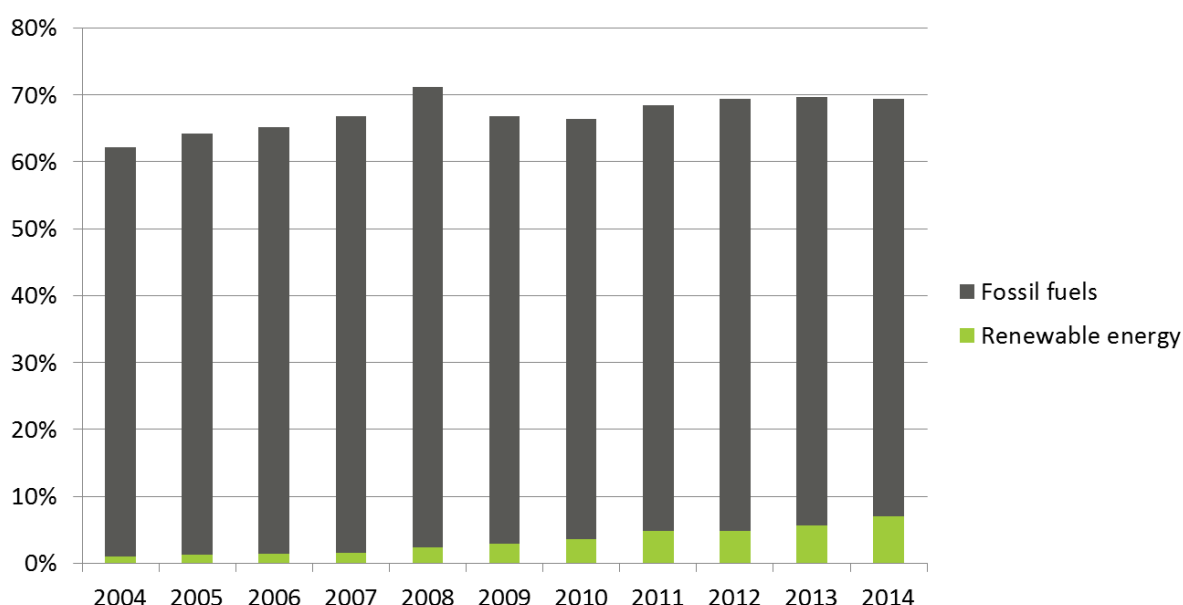
Chapter 3 Global analysis

This chapter outlines the trends in financing of the 75 selected financial institutions towards the selected companies attributable to fossil fuels (coal mining and oil & gas), renewable energy input equipment manufacturers (solar panels, concentrated solar power plants, wind turbine manufacturers, and geothermal power turbine and engineering companies), renewable energy projects and utility companies, over the period 2004-2014.

Figure 3 provides an overview of the changes in portfolio composition of the 42 researched utility companies. It shows that there has been a gradual increase in renewable energy (solar, wind and geothermal), however, the electricity is still predominantly generated through fossil fuels. It is true that utility companies are making efforts to reduce the CO₂ emissions of their fossil fuel power plants. There is also a trend to use more gas instead of coal. However, further strides can be made to increase the use of renewable energy. In the 10 years covered by this study, the total renewable generating capacity has still not risen above 10%.

This is not to say that there are no utility companies making sufficient effort to increase the renewable energy proportion of their generating portfolios. On the contrary, there are an increasing number of utility companies making every effort to increase their use of renewable energy. Often such projects require high levels of investment and financial support. Such renewable energy projects are also included in the scope of this study. Globally financial institutions should increase their support to such renewable energy projects and decrease their financing of fossil fuels, and decrease their financial support to utility companies that are not making every effort to increase their use of renewable energy while phasing out power plants with high CO₂ emissions.

Figure 3 Annual portfolio proportions of researched utility companies



3.1 Loans and underwriting

In the second half of the period of study loans and underwriting to selected companies attributable to renewable energy, and renewable energy projects, provided by the 75 financial institutions included in the study increased by 26%. Loans and underwriting to the selected companies attributable to fossil fuels only increased 1.5%. Total loans and underwriting to the selected companies attributable renewable energy, and renewable energy projects, increased from US\$ 95 billion in the first half of the period 2004-2014, to US\$ 119 billion in the second half. However, this contrasts starkly with the total value of loans and underwriting to the selected companies attributable to fossil fuels, which increased from US\$ 1,008 billion, to US\$ 1,023 billion. A decrease in loans and underwriting to fossil fuels is, of course, most desirable (see Appendix 1 for detailed differences between financial institutions).

Figure 4 provides an overview of the annual financing of loans to selected companies attributable to renewable energy and fossil fuels, and renewable energy projects, in the period 2004-2014. It is evident that there is a very large difference in financing to selected companies attributable to renewable energy and fossil fuels. In 2006, loans to selected companies attributable to fossil fuels were more than eight times as much as renewable energy. The fossil fuels sector was more affected by the global economic crisis than the renewable energy sector. However, it also recovered and developed much more rapidly than the renewable energy sector. There does not appear to be a strong upwards in loans to renewable energy, either to renewable energy projects, renewable energy input component manufacturers, or utility companies renewable energy portfolios as seen in Figure 4.

Figure 4 Annual loans provided by researched financial institutions to the selected companies

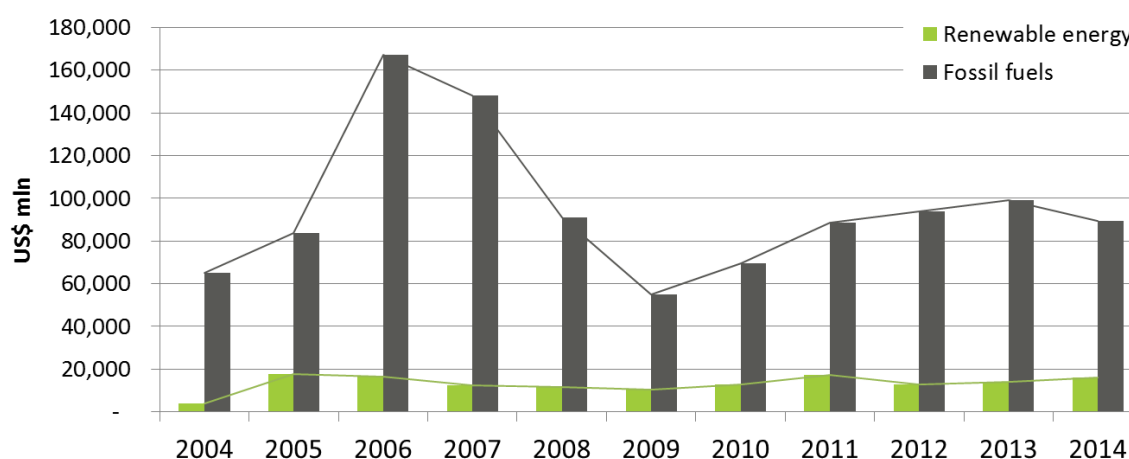
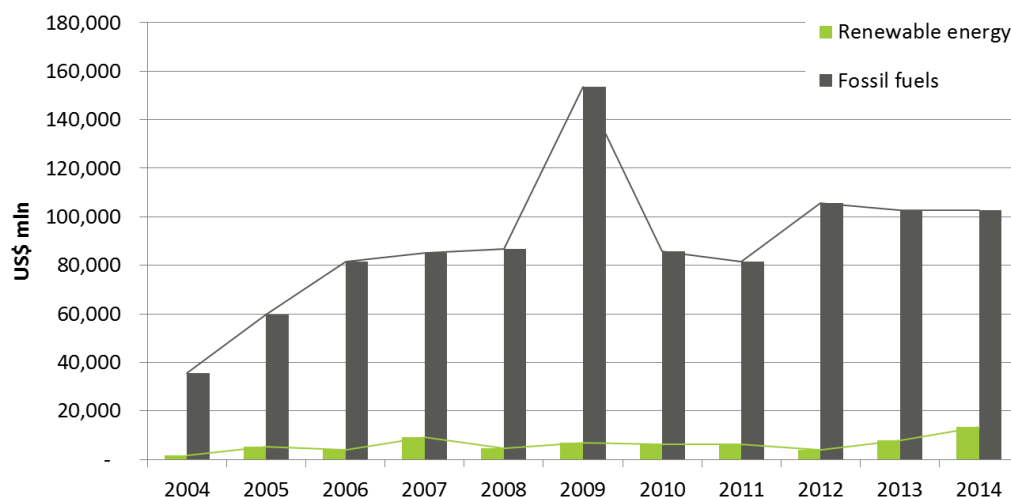


Figure 5 as with loans to the renewable energy sector, underwriting services to the selected companies attributable to renewable energy, and renewable energy projects, are much lower than underwriting services provided to the selected companies attributable to fossil fuels.

Noteworthy is the spike in underwriting services provided to the selected companies attributable for fossil fuels in 2009. Underwriting services to the selected companies attributable to fossil fuels seem to have levelled off in 2013.

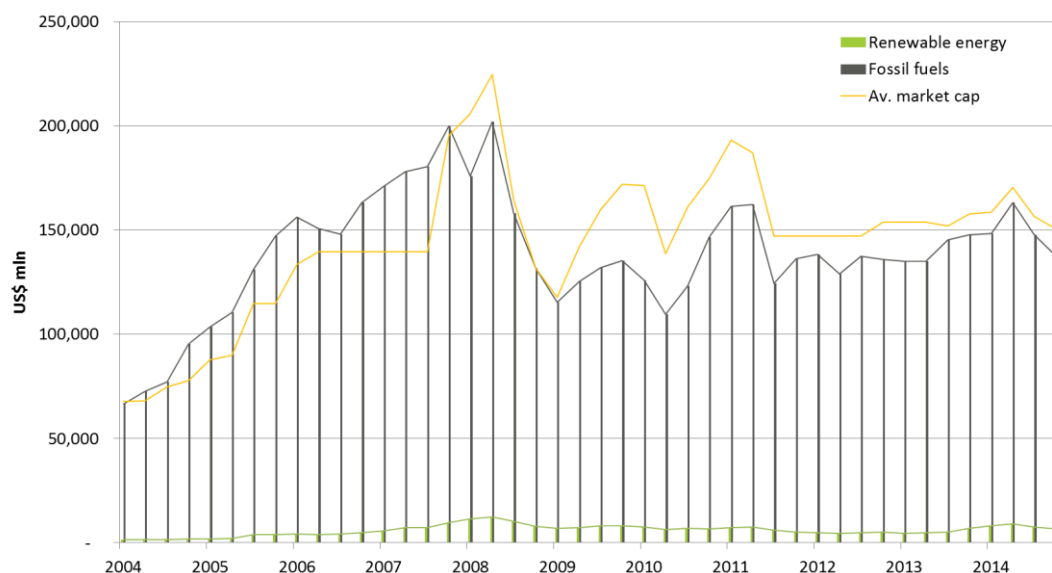
Figure 5 Annual underwriting services provided by researched financial institutions to the selected companies



3.2 Shareholdings

Figure 6 shows the annual investments by all researched financial institutions in all selected companies per quarter over the period 2004-2014. Noteworthy is that investments in selected companies attributable to fossil fuels follow similar trends as the fluctuations in average market capitalization of the researched companies. However, investments in selected companies attributable to renewable energy were consistently low. Investments rose in the period 2004-2008 as interest in renewable energy took off and there was an increase in investments in solar panel and wind turbine manufacturers in particular. However, since the global economic crisis it seems that investors believe that fossil fuel companies and the fossil fuels sector in general are more profitable and attractive than renewable energy. Equally notable is that the gap between fossil fuels and renewables was much wider in 2014 than in 2004 (see Appendix 1 for detailed differences between financial institutions).

Figure 6 Annual investments by researched financial institutions in selected companies



Chapter 4 Top 25 financial institutions

This chapter outlines the trends in financing of world's 25 largest financial institutions on the basis of total assets, towards the selected companies attributable to fossil fuels (coal mining and oil & gas), renewable energy input equipment manufacturers (solar panels, concentrated solar power plants, wind turbine manufacturers, and geothermal power turbine and engineering companies), renewable energy projects, and utility companies, over the period 2004-2014.

4.1 Loans and underwriting

This section provides an analysis of the loans and underwriting services provided by the 25 largest financial institutions globally to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects. Section 4.1.1 presents the annual changes in financing for the period 2004-2014. Section 4.1.2 provides a ranking of the financial institutions on the basis of the total value of their loans and underwriting services provided to the selected companies attributable to fossil fuels.

4.1.1 Annual analysis

Table 7 shows that the total loans and underwriting to the selected companies attributable to renewable energy, and renewable energy projects, in the period of study for the top 25 financial institutions has increased by 35% from the first half of the period of study to the second. Total loans and underwriting to the selected companies attributable to fossil fuels has increased by 1%. The proportion of all loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects has increased by 2%, from 5% to 7%. The proportion attributable to fossil fuels has increased by 3%, from 63% to 66%.

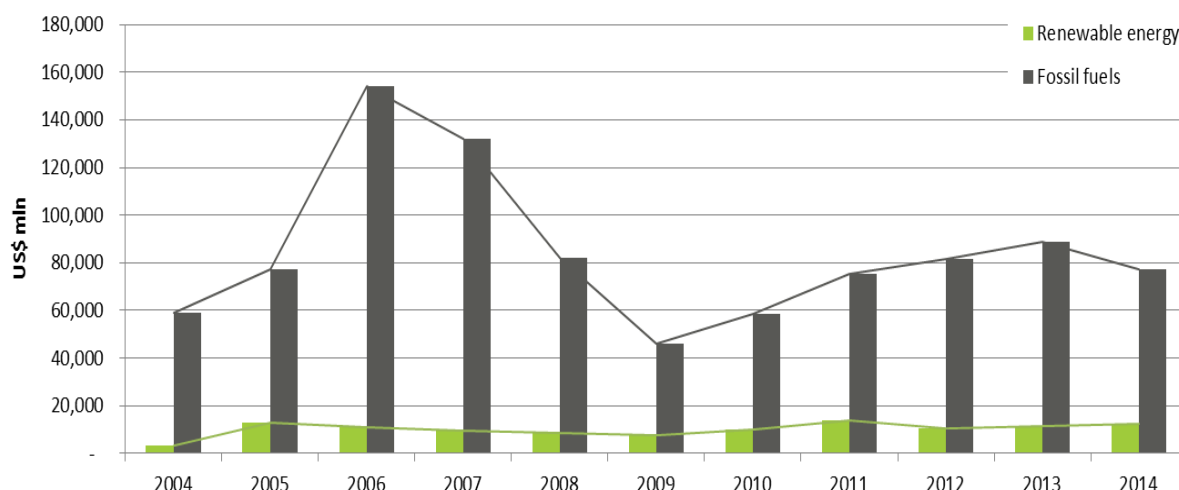
Table 7 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	35%	2%
Fossil fuels	1%	3%

Figure 7 shows the value of loans provided by the top 25 financial institutions globally to the selected companies and renewable energy projects for the period 2004-2014. On the basis of the adjusters calculated according to the methodology described in Chapter 2 the values of these loans that can be attributed to renewable energy and fossil fuels are shown in Figure 7. The analysis of the loans provided by the top 25 financial institutions shows similar trends to that of the global analysis in Chapter 3. 87% of the total identified loans to the selected companies attributable to renewable energy and renewable energy projects and fossil fuels were provided by the top 25 financial institutions.

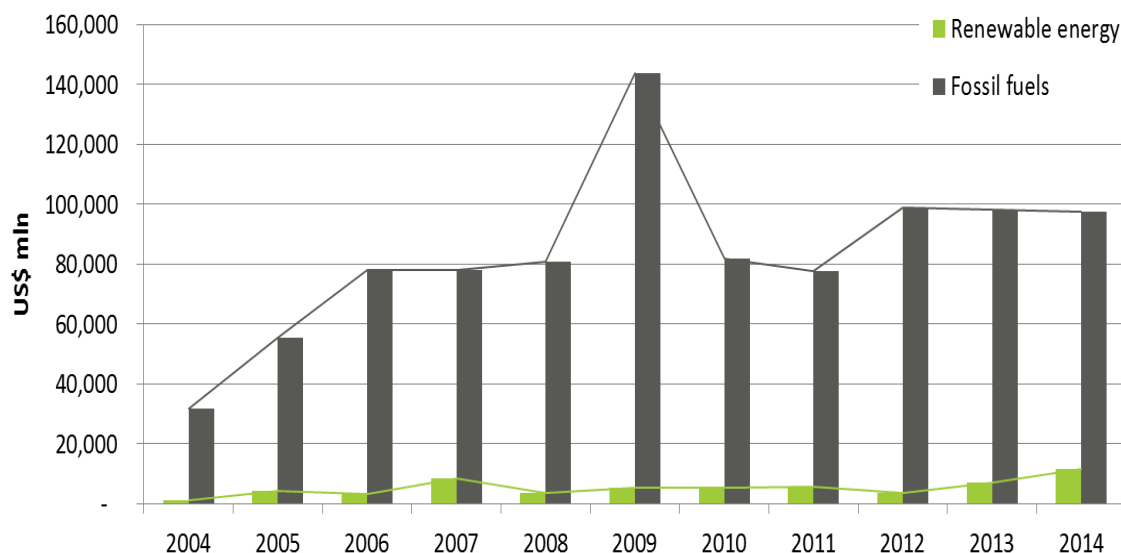
Loans to the selected companies attributable to fossil fuels declined in the wake of the global economic crisis, but recovered rapidly thereafter. Loans to the selected companies attributable to renewable energy and renewable energy projects were significantly lower throughout the period of study. The differences between the two sometimes reached a magnitude of eight times more loans to the selected companies attributable to fossil fuels than to renewable energy. Loans to the selected companies attributable to renewable energy and renewable energy projects fluctuated marginally throughout the period of study. They do not show a significant upward trend as one might have hoped.

Figure 7 Annual loans provided by top 25 financial institutions to the selected companies



The underwriting services provided by the top 25 financial institutions followed the trend identified in the global analysis in Chapter 3. In the wake of the global economic crisis underwriting services attributable to fossil fuels actually increased with significant peak in 2009. The total value of underwriting services provided to the selected companies attributable to fossil fuels is many times higher than that provided to renewable energy. Underwriting services to the selected companies attributable to renewable energy fluctuated in the lead up to the global economic crisis, as well as in the following years, showing an upward trend by 2013 and 2014.

Figure 8 Annual underwriting services provided by top 25 financial institutions to the selected companies



4.1.2 Rankings

This section provides a ranking of the top 25 financial institutions globally in terms of the value of their loans and underwriting services to the selected companies attributable to fossil fuels. Figure 9 shows the ranking of the top financiers of the selected companies attributable to fossil fuels for the period 2009 to 2014. Zooming in on the most recent five years provides a more current picture of the financial activities of the selected financial institutions with regard to their financing of the selected companies attributable to fossil fuels and renewable energy. The top three places are all occupied by financial institutions from the United States. In the period 2009 to 2014, Citigroup and JPMorgan Chase each provided over US\$ 75 billion to the selected companies attributable to fossil fuels. In the same period they only provided approximately US\$ 5 billion in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects.

Figure 9 shows that this difference in financing to fossil fuels and renewable energy is common to the vast majority of the top 25 financial institutions. It is notable that Chinese financial institutions provided hardly any loans and underwriting services to the selected companies attributable to renewable energy and renewable energy projects.

Figure 9 Ranking of the top financiers of the selected companies attributable to fossil fuels (loans & underwriting, US\$ mln, 2009-2014)

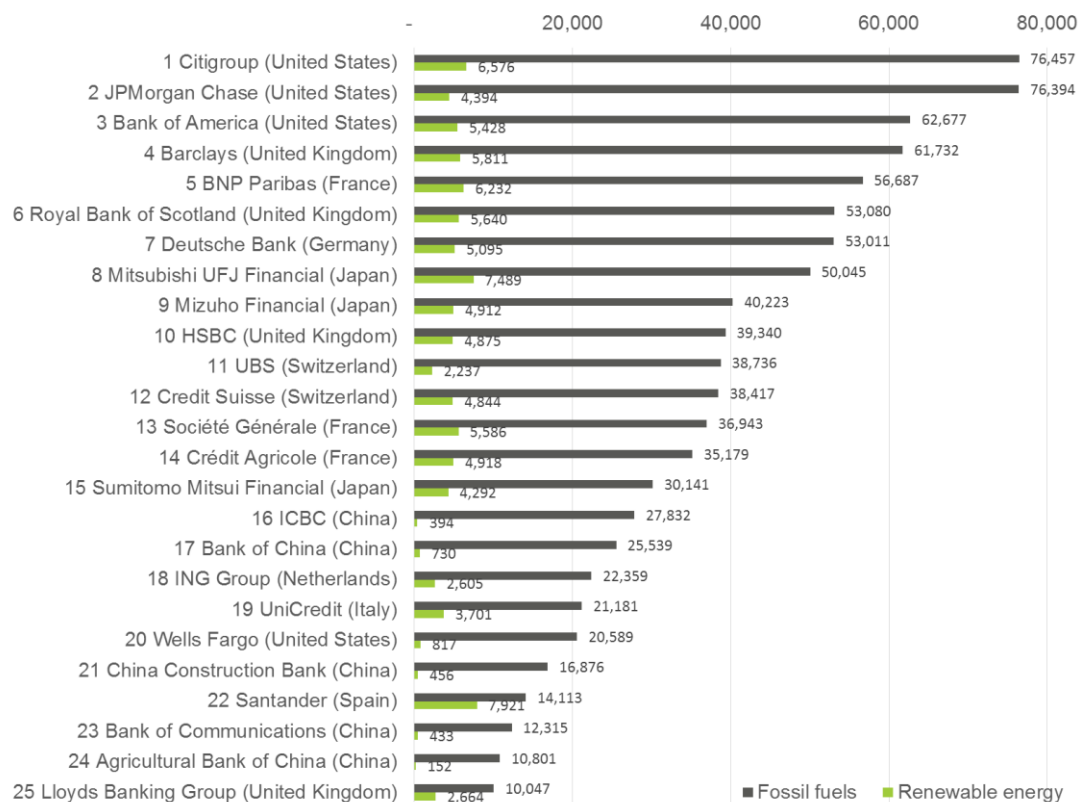


Table 8 provides an overview of the loans and underwriting to the selected companies attributable to fossil fuels and renewable energy. It shows that for 23 of the 25 financial institutions the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects and fossil fuels was higher than 80%. For 15 this proportion was over 90%. This indicates the huge disparity between the financing of renewable energy and fossil fuels.

Table 8 also shows the change in the proportion of fossil fuels in relation to the total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects and fossil fuels. More than half of the researched financial institutions decreased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). However, these decreases were on the whole very small, not exceeding 10%. 10 financial institutions actually increased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014).

Table 8 Overview of loans and underwriting to the selected companies attributable to fossil fuels and renewable energy, and renewable energy projects (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Citigroup	United States	76,457	6,576	92%	-3%
JPMorgan Chase	United States	76,394	4,394	95%	-2%
Bank of America	United States	62,677	5,428	92%	-5%
Barclays	United Kingdom	61,732	5,811	91%	-6%
BNP Paribas	France	56,687	6,232	90%	1%
Royal Bank of Scotland	United Kingdom	53,080	5,640	90%	1%
Deutsche Bank	Germany	53,011	5,095	91%	4%
Mitsubishi UFJ Financial	Japan	50,045	7,489	87%	-9%
Mizuho Financial	Japan	40,223	4,912	89%	-6%
HSBC	United Kingdom	39,340	4,875	89%	-6%
UBS	Switzerland	38,736	2,237	95%	-2%
Credit Suisse	Switzerland	38,417	4,844	89%	-6%
Société Générale	France	36,943	5,586	87%	-7%
Crédit Agricole	France	35,179	4,918	88%	2%
Sumitomo Mitsui Financial	Japan	30,141	4,292	88%	-7%
ICBC	China	27,832	394	99%	1%
Bank of China	China	25,539	730	97%	-2%
ING Group	Netherlands	22,359	2,605	90%	4%
UniCredit	Italy	21,181	3,701	85%	3%
Wells Fargo	United States	20,589	817	96%	-1%
China Construction Bank	China	16,876	456	97%	1%
Santander	Spain	14,113	7,921	64%	3%
Bank of Communications	China	12,315	433	97%	-3%
Agricultural Bank of China	China	10,801	152	99%	2%
Lloyds Banking Group	United Kingdom	10,047	2,664	79%	6%
Total		930,716	98,203	90%	-2%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

4.2 Shareholdings

This section provides an analysis of the investments in shareholdings made by the 25 largest financial institutions globally to renewable and fossil fuels. Section 4.2.1 presents the annual changes in investments for the period 2004-2014. Section 4.2.2 provides a ranking of the financial institutions on the basis of the total value of their investments in shareholdings attributable to fossil fuels.

4.2.1 Annual analysis

Table 9 shows that average annual investments in selected companies attributable to renewable energy have increased by 15% between 2004 and 2014. Average annual investments in selected companies attributable to fossil fuels have remained generally stable. However, as a proportion of total investments in selected companies, the proportion of investments attributable to renewable energy has increased 1%. The proportion attributable to fossil fuels has increased by 22%.

Table 9 Change in average annual shareholdings in the selected companies attributable to renewable energy and fossil fuels (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	15%	1%
Fossil fuels	0%	22%

Figure 10 provides an overview of the investments of the top 25 global financial institutions in the shareholdings of the selected companies. Investments in selected companies attributable to fossil fuels follow similar trends to the fluctuations in the average market capitalization of the selected companies. However, investments in selected companies attributable to renewable energy do not. While there is an increase investments in selected companies attributable to renewable energy, these peak in 2008, gradually decrease until the third quarter of 2013, after which they rise again slowly. By the second half of 2014 they show a decline again, although this decline is also reflected in the decline in average market capitalization of the selected companies.

There does not seem to be much growth in investments in selected companies attributable to renewable energy, and investments in non-renewable account for more than 10 times the value of investments in selected companies attributable to renewable energy.

Figure 10 Annual investments by top25 financial institutions in selected companies

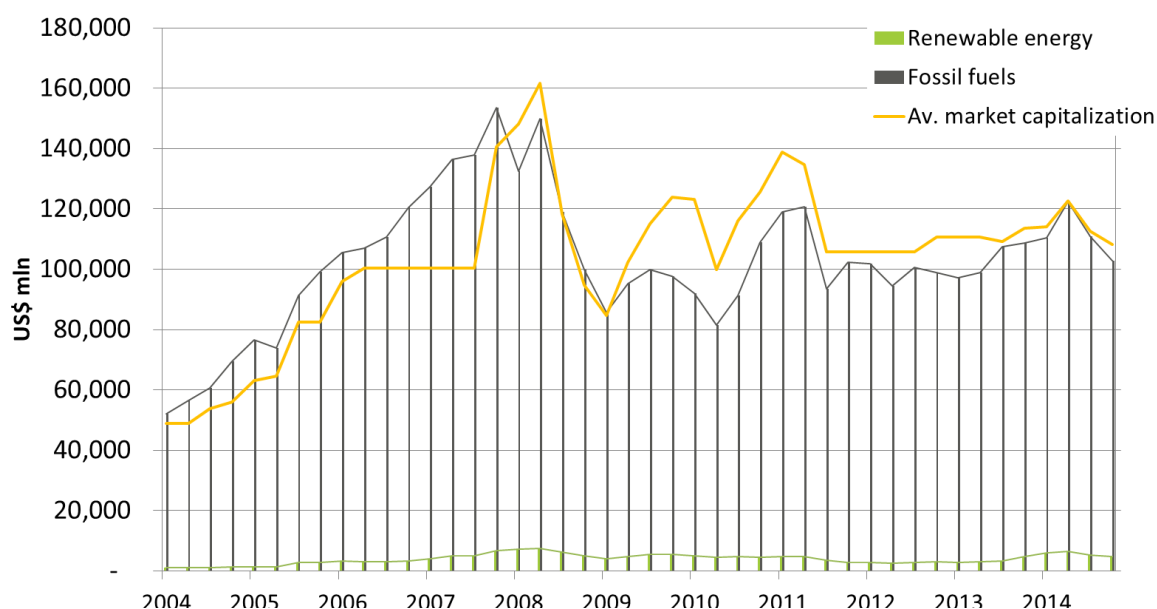


Table 10 shows the average annual investments of the top 25 financial institutions globally in the selected companies that can be attributed to renewable energy and fossil fuels. This differs from Figure 10 above which showed the total investments per quarter. From Table 10 the difference in scale between the investments in selected companies attributable to renewable energy and fossil fuels is even more evident. In 2007, for example, the top 25 global financial institutions together held approximately US\$ 5 billion in renewable energy shares, while they held approximately US\$ 140 billion in fossil fuels. The scale of difference between these investments has fluctuated over the years, but has not shrunk significantly. This is partly due to the fact that oil & gas and coal mining companies are worth more than solar panel manufacturers, wind turbine manufacturers, and geothermal power turbine manufacturers. However, financial institutions could show their commitment to mitigate climate change by investing less in fossil fuels and investing more renewable energy. If the shares of renewable energy companies were worth more, share issuances might be a more worthwhile financing strategy for renewable energy companies to expand their operations.

Table 10 Average annual investments in selected companies attributable to renewable energy sector

Year	Renewable energy (US\$ mln)	Fossil fuels (US\$ mln)
2004	1,122	59,727
2005	2,141	85,218
2006	3,120	110,906
2007	5,251	138,781
2008	6,482	125,275
2009	4,914	94,575
2010	4,688	93,458
2011	3,987	108,933
2012	2,806	98,892
2013	3,489	103,010

Year	Renewable energy (US\$ mln)	Fossil fuels (US\$ mln)
2014	5,640	111,580

Table 11 provides an overview of the proportions of total investments in the selected companies by the top 25 financial institutions globally attributable to renewable energy and fossil fuels. Most notable is the increase in the proportions of investments in selected companies attributable to fossil fuels. While there are fluctuations there has overall been a growth in proportions of investments in selected companies attributable to fossil fuels to 83% in 2014. Proportions of investments in selected companies attributable to renewable energy have also increased from 1% in 2004, to 4% in 2008, fluctuating between 2% and 4% and hitting 4% again in 2014. Nevertheless, such differences in proportions do not show a commitment to making a positive contribution to averting climate change. On the contrary, they show token investments renewable energy and a strong commitment to the highly profitable fossil fuels sector.

Table 11 Average annual % investment in renewables

Year	Renewable energy	Fossil fuels
2004	1%	56%
2005	1%	52%
2006	1%	45%
2007	2%	54%
2008	4%	75%
2009	4%	76%
2010	4%	72%
2011	3%	78%
2012	2%	80%
2013	3%	83%
2014	4%	83%

4.2.2 Rankings

This section provides a ranking of the top 25 financial institutions globally in terms of the value of their investments attributable fossil fuels. Figure 11 provides a ranking of the top 25 financial institutions on the basis of their average annual investments in the selected companies attributable to fossil fuels in the period 2009-2014. JPMorgan Chase, UBS and Bank of America occupy to top three positions with the highest average annual investments in selected companies attributable to fossil fuels. All three financial institutions invested on average more than US\$ 11 billion in fossil fuels annually in the period 2009-2014. Only 9 financial institutions had average annual investments in selected companies attributable to fossil fuels below US\$ 1 billion.

Figure 11 also shows the large gap between average annual investments in selected companies attributable to fossil fuels and renewable energy. Only one financial institution had an average annual investment in renewable energy of over US\$ 1 billion, Mitsubishi UFJ Financial. Only one other financial institution had an average annual investment of over US\$ 0.5 billion, Deutsche Bank. The third largest investor in fossil fuels, Bank of America, only had an annual investment in renewable energy of US\$ 68 million in the period 2009-2014.

Figure 11 Ranking of the top average annual investors in the selected companies attributable to fossil fuels (US\$ mln, 2009-2014)

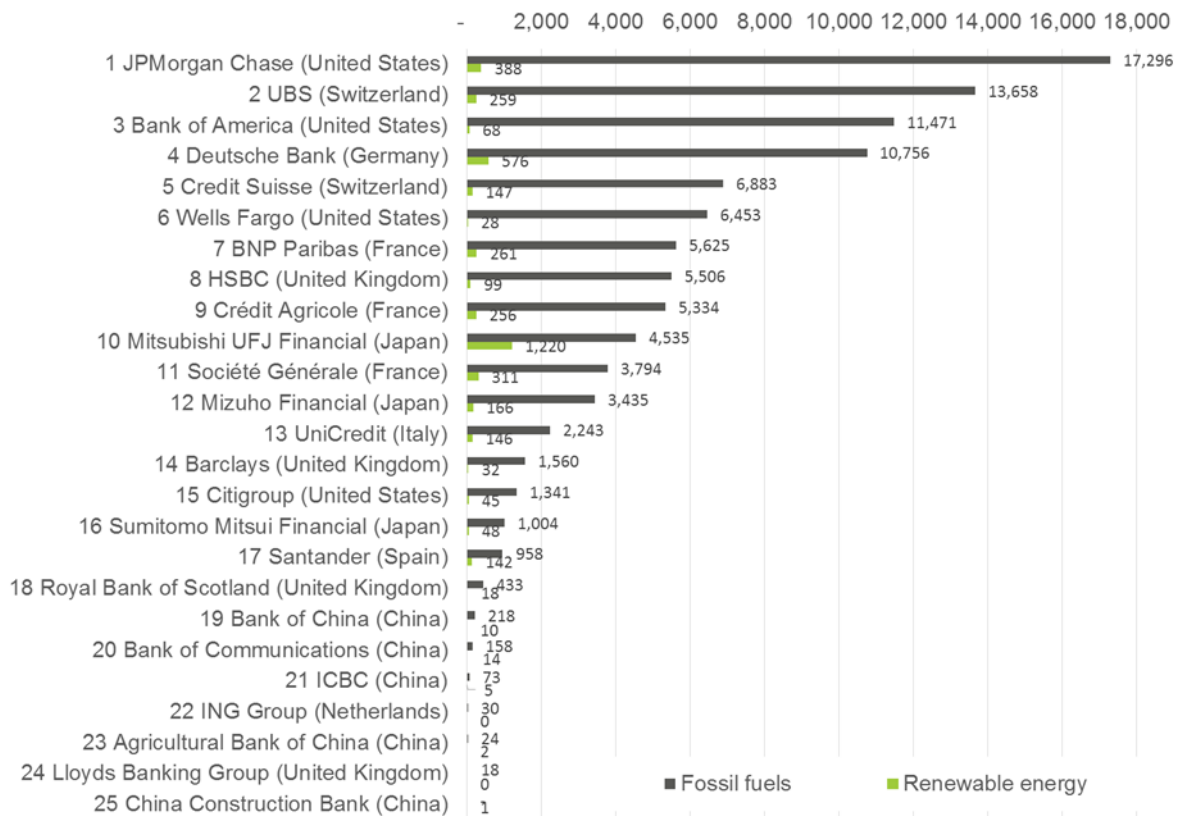


Table 12 provides an overview of the investments in the selected companies attributable to fossil fuels and renewable energy. It shows that for 23 of the 25 financial institutions the proportion of fossil fuels in their total investments in the selected companies attributable to renewable energy and fossil fuels was higher than 90%. For 17 this proportion was over 95%. For three financial institutions this proportion was essentially 100%. This indicates the huge disparity between the financing of renewable energy and fossil fuels.

Table 12 also shows the change in the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in the total investments in the selected companies attributable to renewable energy and fossil fuels. 13 financial institutions marginally decreased the proportion of fossil fuels in the total investments in the selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). However, these decreases were very small, not exceeding 5 percentage points. 5 financial institutions actually increased the proportion of fossil fuels in the total investments in the selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). Barclays had the highest proportion increase.

Table 12 Overview of shareholdings in the selected companies attributable to fossil fuels and renewable energy (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
JPMorgan Chase	United States	17,296	388	98%	-1%
UBS	Switzerland	13,658	259	98%	0%
Bank of America	United States	11,471	68	99%	2%
Deutsche Bank	Germany	10,756	576	95%	-1%
Credit Suisse	Switzerland	6,883	147	98%	-1%
Wells Fargo	United States	6,453	28	100%	2%
BNP Paribas	France	5,625	261	96%	1%
HSBC	United Kingdom	5,506	99	98%	0%
Crédit Agricole	France	5,334	256	95%	-2%
Mitsubishi UFJ Financial	Japan	4,535	1,220	79%	-3%
Société Générale	France	3,794	311	92%	-5%
Mizuho Financial	Japan	3,435	166	95%	0%
UniCredit	Italy	2,243	146	94%	-2%
Barclays	United Kingdom	1,560	32	98%	9%
Citigroup	United States	1,341	45	97%	-2%
Sumitomo Mitsui Financial	Japan	1,004	48	95%	-2%
Santander	Spain	958	142	87%	2%
Royal Bank of Scotland	United Kingdom	433	18	96%	-3%
Bank of China	China	218	10	96%	-3%
Bank of Communications	China	158	14	92%	-3%
ICBC	China	73	5	94%	-5%
ING Group	Netherlands	30	0	100%	0%
Agricultural Bank of China	China	24	2	93%	n/a
Lloyds Banking Group	United Kingdom	18	0	100%	n/a
China Construction Bank	China	-	1	0%	n/a
Total		102,805	4,241	96%	0%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

4.3 Financial institution analysis

This section provides an analysis of the changes in values of loans, underwriting services and investments in shares in selected companies that can be attributable to renewable energy and fossil fuels individually for the top 25 financial institutions globally in terms of total assets. The sub-sections are ordered alphabetically by bank name.

4.3.1 Agricultural Bank of China (China)

This section provides an analysis of the financing provided by the Agricultural Bank of China to the selected companies that can be attributed to renewable energy and fossil fuels.

This study did not identify any commitments by the Agricultural Bank of China regarding climate change mitigation. However, the Green Credit Guidelines published by the China Banking Regulatory Commission in 2012, state “Banking institutions shall promote green credit from a strategic height, increase the support to green, low-carbon and recycling economy, fend off environmental and social risks, and improve their own environmental and social performance, thus optimizing their credit structure, improving the quality of services, and facilitating the transformation of development mode.”⁴⁴

Table 13 shows that Agricultural Bank of China increased its loans and underwriting services to the selected companies attributable to renewable energy by 194% in the second half of the period of study. However, loans and underwriting to the selected companies attributable to fossil fuels increased by 706%. There was a decrease of 2% in terms of the proportion of total loans and underwriting attributable to renewable energy, and a decrease of 8% attributable to fossil fuels.

Table 13 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	194%	-2%
Fossil fuels	706%	-8%

• Loans

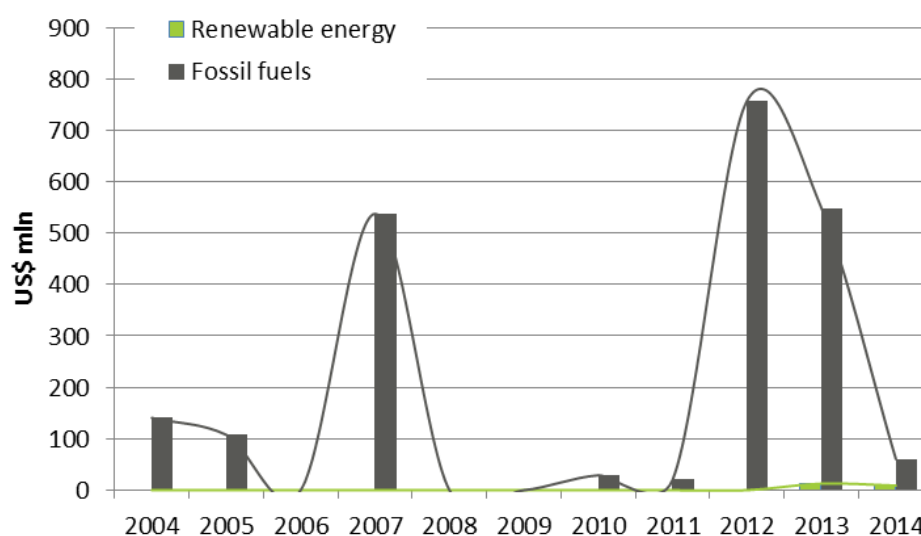
Agricultural Bank of China only started providing loans to the selected companies attributable to renewable energy in the second half of the period of study. Loans to the selected companies attributable to fossil fuels increased by 80% in the second half of the period of study.

Figure 12 shows the loans attributable to renewable energy and fossil fuels provided to the companies within the scope of this research by Agricultural Bank of China. It is evident that the vast majority of Agricultural Bank of China’s loans are attributable to fossil fuels. It has only provided minimal contributions to renewable energy in 2013 and 2014. Loans to the selected companies attributable to fossil fuels declined during the global economic crisis but quickly pick up afterwards. Even though the Green Credit Guidelines were published in 2012, encouraging the “increase [in] support to green, low-carbon and recycling economy”, 2012 saw the highest levels of loans attributable to fossil fuels.⁴⁵

44 China Banking Regulatory Commission (2012, February), *Green Credit Guidelines*, online: <http://www.cbrc.gov.cn/EngdocView.do?docID=3CE646AB629B46B9B533B1D8D9FF8C4A>, viewed in September 2015.

45 China Banking Regulatory Commission (2012, February), *Green Credit Guidelines*, online: <http://www.cbrc.gov.cn/EngdocView.do?docID=3CE646AB629B46B9B533B1D8D9FF8C4A>, viewed in September 2015.

Figure 12 Agricultural Bank of China loans to the selected companies (2004-2014)



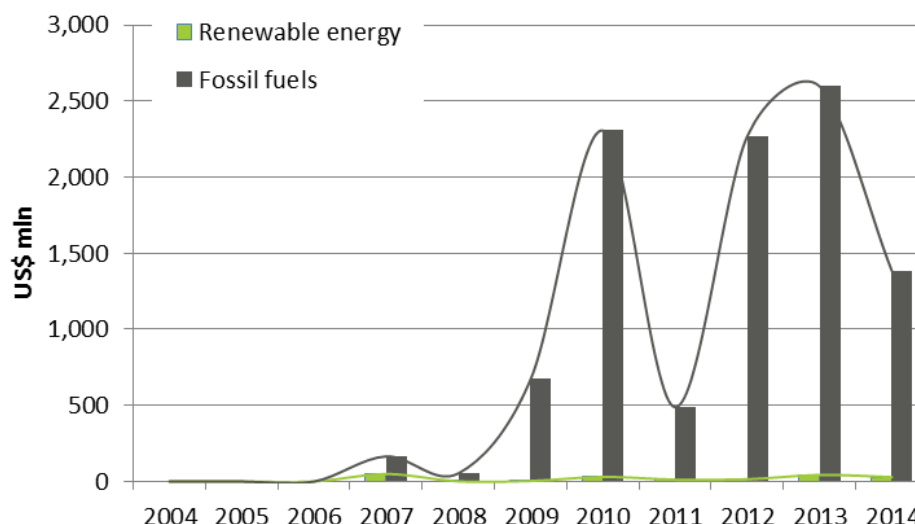
- **Underwriting**

Underwriting services provided by the Agricultural Bank of China attributable to renewable energy increased 152% in the second half of the period of study. Underwriting services provided to the selected companies attributable to fossil fuels increased by 1,591% in the same period.

Figure 13 depicts the changes in Agricultural Bank of China's underwriting services attributable to renewable and fossil fuels. Whereas loans to the selected companies attributable to fossil fuels declined during the global economic crisis, underwriting services increased significantly. Agricultural Bank of China only provided minimal contributions to renewable energy, even though the Green Credit Guidelines were published in 2012, encourage the "increase [in] support to green, low-carbon and recycling economy".⁴⁶

46 China Banking Regulatory Commission (2012, February), *Green Credit Guidelines*, online: <http://www.cbrc.gov.cn/EngdocView.do?docID=3CE646AB629B46B9B533B1D8D9FF8C4A>, viewed in September 2015.

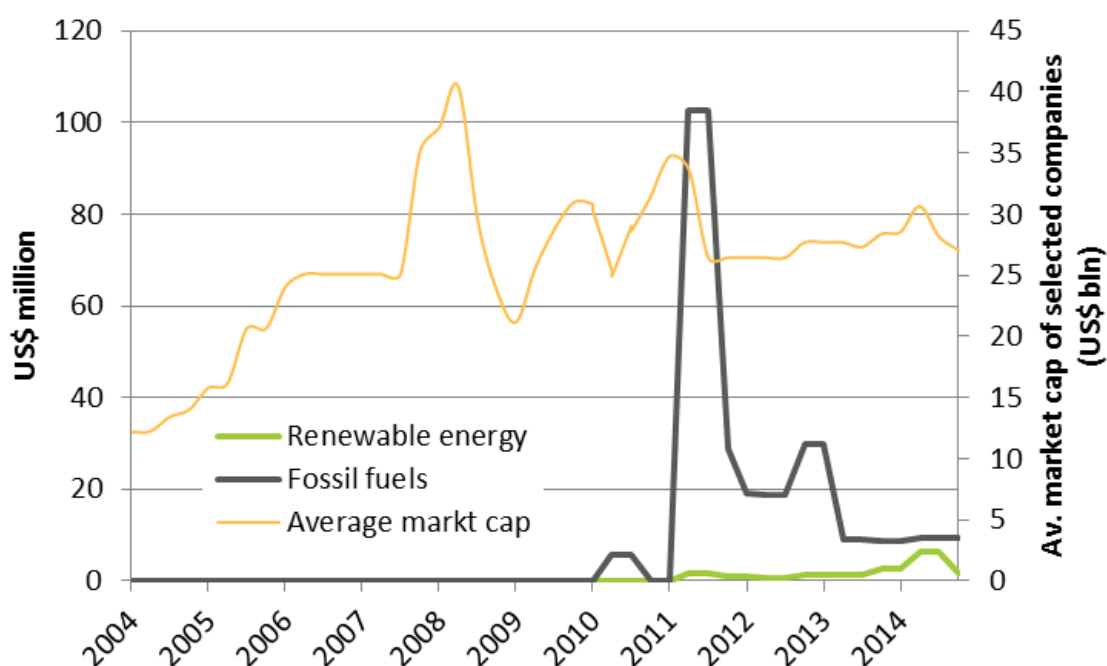
Figure 13 Agricultural Bank of China underwriting services to the selected companies (2004-2014)



- Shareholdings**

Agricultural Bank of China's investments in the shareholdings of the selected companies are shown in Figure 14. There was very little data regarding Agricultural Bank of China's shareholdings in selected companies prior to 2010, therefore no comparison is made between the average investments in the two halves of the period of study. Agricultural Bank of China's investments that are attributable to fossil fuels increased significantly after 2010, then declined rapidly, levelling off in 2013. Agricultural Bank of China's investments attributable to renewable energy gradually increased until the second quarter of 2014, after which they declined again.

Figure 14 Agricultural Bank of China shareholdings in selected companies 2004-2014



4.3.2 Bank of America (United States)

This section provides description of the financing provided by the Bank of America to the selected companies that can be attributed to renewable energy and fossil fuels.

In March 2007 “Bank of America Corporation announced today a [US] \$20 billion initiative to support the growth of environmentally sustainable business activity to address global climate change. Bank of America's ten-year initiative encourages development of environmentally sustainable business practices through lending, investing, philanthropy and the creation of new products and services.”⁴⁷

In April 2008 Bank of America stated that it would adopt the Carbon Principles.⁴⁸

In September 2009 Bank of America subscribed to the investor statement of the Corporate Climate Communique.⁴⁹

In June 2012 “Bank of America today announced a new 10-year, [US] \$50 billion environmental business goal to help address climate change, reduce demands on natural resources and advance lower-carbon economic solutions. The new goal, effective Jan. 1, 2013, follows the anticipated completion of the company's current 10-year, [US] \$20 billion environmental business initiative – a program that is more than four years ahead of schedule.”

Again in September 2014, ““Bank of America [...] announced a Catalytic Finance Initiative, designed to stimulate at least [US] \$10 billion of new investment into high-impact clean energy projects.”⁵⁰

It is clear that Bank of America made many commitments, the analysis below shows if these commitments had any impact on its financing of renewable energy and fossil fuels.

Table 14 shows that Bank of America increased its loans and underwriting services attributable to renewable energy by 155%, while also decreasing its financing of fossil fuels by 5%. Also in terms of the proportion of the total loans and underwriting to the selected companies attributable to renewable energy there was an increase of 4%, and a decrease in the proportion to fossil fuels by 5%.

Table 14 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	155%	4%
Fossil fuels	-16%	-5%

47 Bank of America (2007, March 6). *Bank of America Announces \$20 Billion Environmental Initiative*, online: <http://newsroom.bankofamerica.com/press-release/corporate-and-financial-news/bank-america-announces-20-billion-environmental-initiative>, viewed in August 2015.

48 Bank of America (2008, April 1). *Bank of America Announces Adoption of Carbon Principles*, online: <http://newsroom.bankofamerica.com/press-release/commercial-middle-market-banking/bank-america-announces-adoption-carbon-principles-natu>, viewed in August 2015.

49 Copenhagen Communique (2009). *Signatories to the Copenhagen Communique – 2009*, online: <http://www.climatecommuniquess.com/About/Copenhagen.aspx>, viewed in August 2015.

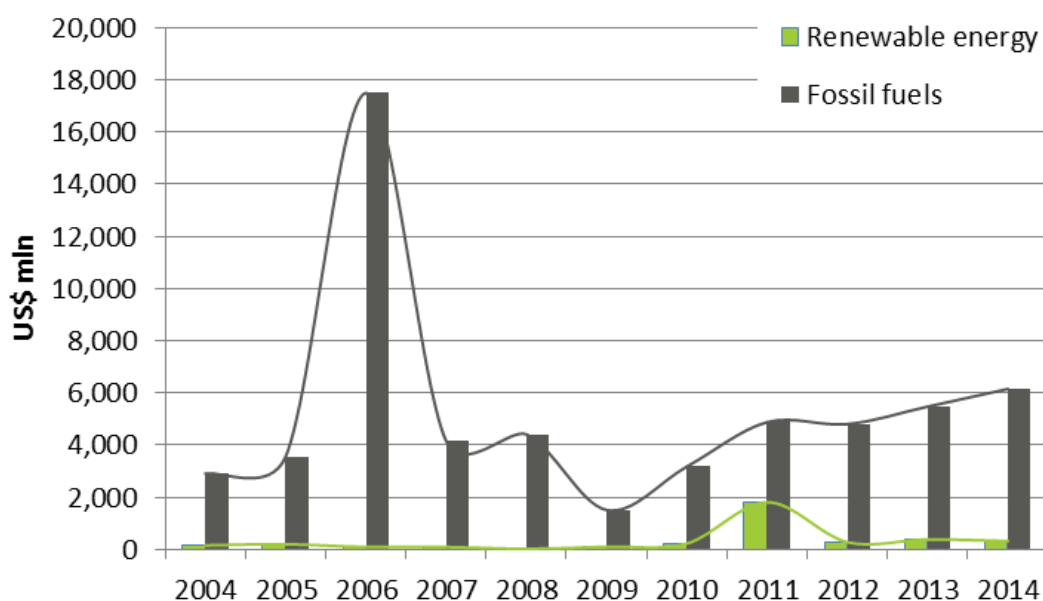
50 Bank of America (2014, September 23). *Bank of America Announces \$10 Billion Catalytic Finance Initiative Investments That Reduce Carbon Emissions*, online: <http://newsroom.bankofamerica.com/press-releases/corporate-and-investment-banking-sales-and-trading-treasury-services/bank-america-ann>, viewed in August 2015.

- **Loans**

Bank of America increased its loans to renewable by 384%, while decreasing its loans to the selected companies attributable to fossil fuels by 25%. Figure 15 shows the changes in Bank of America's loans attributable to renewable and fossil fuels in the period 2004-2014. As with most financial institutions, there is a marked decline in loans during the global economic crisis. However, it is noteworthy how rapidly loans to the selected companies attributable to fossil fuels recovered in 2010, although not reaching the levels of 2006 they have been steadily increasing. Loans to the selected companies attributable to renewable energy were minimal before 2010, peaking in 2011, and declining again rapidly.

If there should be any correlation between the commitments made by the Bank of America as described in the introduction of this section, then it is not evident from Figure 15 below. In fact, the opposite seems to be the case. There seems to be hardly any evidence of its "10-year, [US] \$20 billion environmental business initiative"⁵¹ unless this money was intended for the fossil fuels sector.

Figure 15 Bank of America loans to the selected companies (2004-2014)



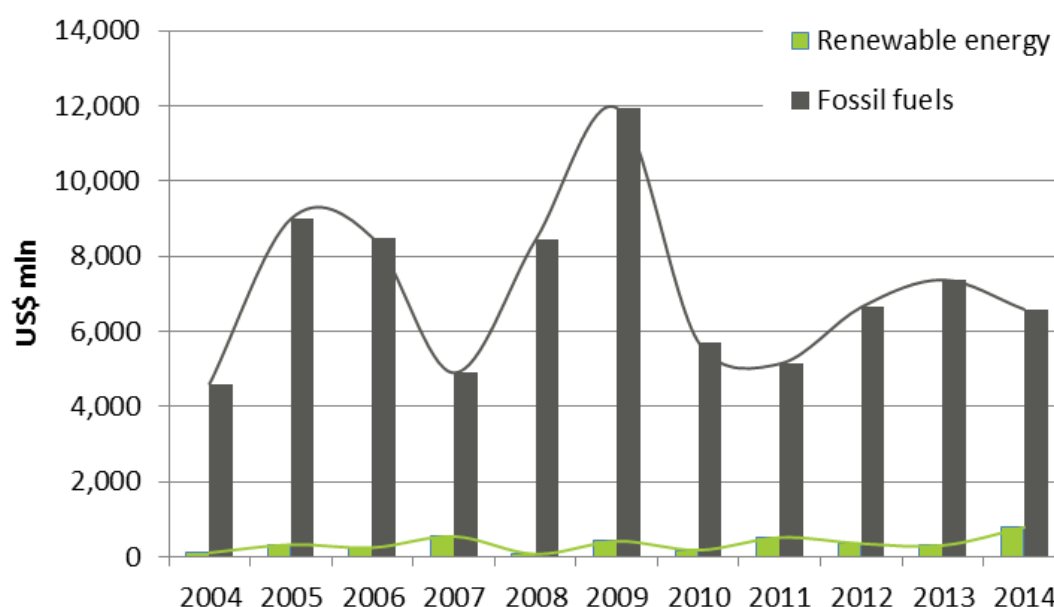
- **Underwriting**

Bank of America increased its underwriting services to renewable energy by 56%, while decreasing its underwriting services to the selected companies attributable to fossil fuels by 16%. In line with the general trend of the top 25 financial institutions, Figure 16 shows that underwriting services to the selected companies attributable to fossil fuels actually increased during the economic crisis. Bank of America's underwriting services to the selected companies attributable to fossil fuels seem to have declined somewhat since before 2010.

⁵¹ Bank of America (2011, June 11). *Bank of America Announces New \$50 Billion Environmental Business Initiative*, online: <http://newsroom.bankofamerica.com/press-release/community-development/bank-america-announces-new-50-billion-environmental-business-initiative>, viewed in August 2015.

Underwriting services to renewable energy were at much lower levels. These have fluctuated since 2005. There seems to be no correlation between the commitments and initiatives of Bank of America as described in introduction of this section and actual underwriting services provided to renewable energy. In April 2008 it adopted the Carbon Principles, but provided the lowest levels of underwriting services to renewable energy, but the third highest levels of underwriting services to the selected companies attributable to fossil fuels (more than US\$ 8 billion). In 2009 it provided approximately US\$ 12 billion to fossil fuels. But in 2007 it had announced the US\$ 20 billion “initiative to support the growth of environmentally sustainable business activity to address global climate change. Bank of America's ten-year initiative encourages development of environmentally sustainable business practices through lending, investing...”⁵²

Figure 16 Bank of America underwriting services to the selected companies (2004-2014)



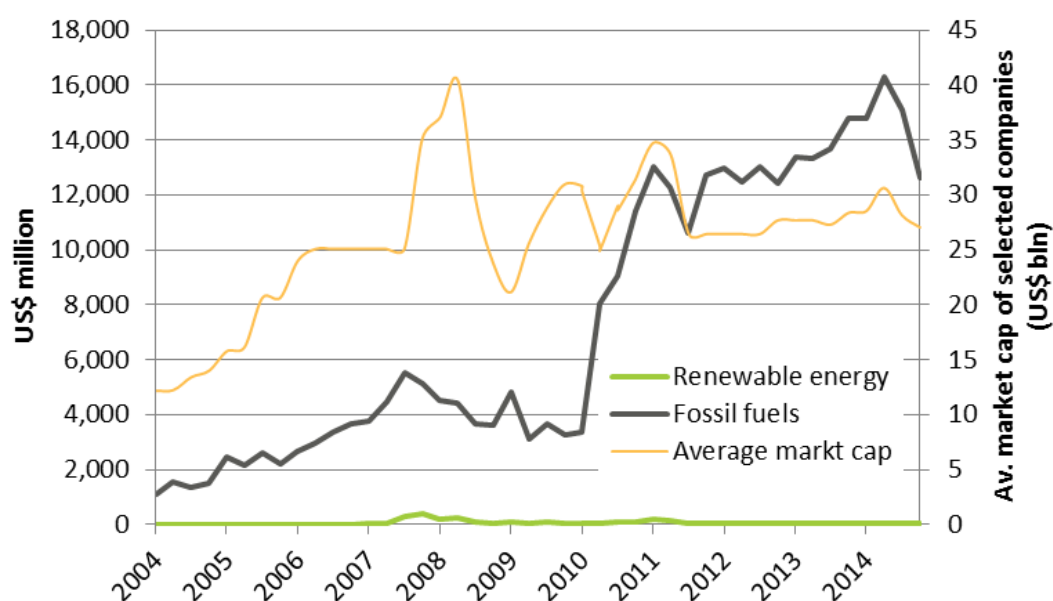
52 Bank of America (2007, March 6). *Bank of America Announces \$20 Billion Environmental Initiative*, online: <http://newsroom.bankofamerica.com/press-release/corporate-and-financial-news/bank-america-announces-20-billion-environmental-initiativ>, viewed in August 2015.

- **Shareholdings**

Bank of America decreased its average annual shareholdings in companies attributable to renewable energy by 8% in the second half of the period of study. At the same time it increased its average annual investment attributable to fossil fuels by 256%. It also decreased the proportion of its total average annual investments in selected companies attributable to renewable energy by 1% while increasing the proportion of its total average annual investments in selected companies attributable to fossil fuels by 4%.

In 2009 Bank of America subscribed to the investor statement of the Corporate Climate Communique, however, from 2009 to the second quarter of 2014 Bank of America's investments attributable to fossil fuels increased rapidly, as Figure 17 shows.⁵³ Bank of America's investments in selected companies attributable to fossil fuels followed the fluctuations in average market capitalization of the researched companies, with a significant increase in 2010. However, Bank of America's investments attributable to renewable energy have remained insignificant since 2004, in contradiction to its various commitments since 2007.

Figure 17 Bank of America shareholdings in selected companies 2004-2014



In July 2015 Bank of America made a pledge to:

“Increase our current environmental business initiative from [US] \$50 billion to [US] \$125 billion by 2025 through lending, investing, capital raising, advisory services and developing financing solutions for clients around the world.

53 Copenhagen Communique (2009). *Signatories to the Copenhagen Communique – 2009*, online: <http://www.climatecommuniques.com/About/Copenhagen.aspx>, viewed in August 2015.

Attract a wider array of capital to clean energy investments by developing innovative financing structures – from reducing investment risk through our Catalytic Finance Initiative to engaging individual investors through our Socially Responsible Investing platform to building new markets for green bonds, yield-cos and other vehicles.”⁵⁴

Let’s hope that this time Bank of America lives up to its commitment.

4.3.3 Bank of China (China)

This section provides an overview of the financing of the Bank of China to the selected companies that are attributable to renewable and fossil fuels.

This research did not identify any commitments made by the Bank of China regarding climate change mitigation. However, the Green Credit Guidelines published by the China Banking Regulatory Commission in 2012, state “Banking institutions shall promote green credit from a strategic height, increase the support to green, low-carbon and recycling economy, fend off environmental and social risks, and improve their own environmental and social performance, thus optimizing their credit structure, improving the quality of services, and facilitating the transformation of development mode.”⁵⁵

Table 15 shows that Bank of China increased its total loans and underwriting to the selected companies attributable to renewable energy by 1,730%, from US\$ 40 million in the first half of the period of study to US\$ 730 million. However, it also increased its total loans and underwriting to the selected companies attributable to fossil fuels in the second half of the period of study by 234%. Bank of China increased the proportion of its total loans and underwriting services to renewable energy by 2%, while also increasing the proportion of its total loans and underwriting attributable to fossil fuels by 4%.

Table 15 Change in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects and fossil fuels (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	1,730%	2%
Fossil fuels	234%	4%

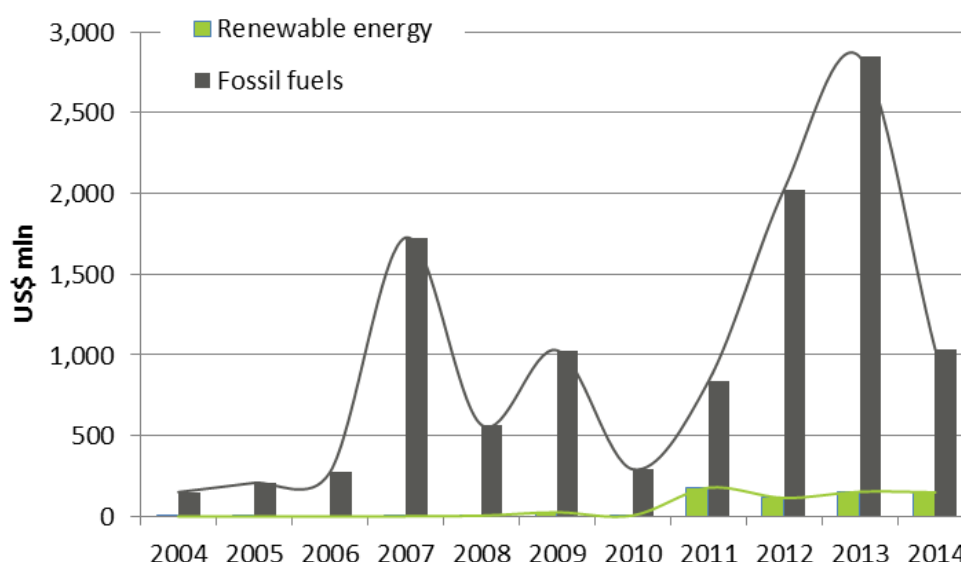
54 US Government (2015, July 27). *Fact Sheet: White House Launches American Business Act on Climate Pledge*, online: <https://www.whitehouse.gov/the-press-office/2015/07/27/fact-sheet-white-house-launches-american-business-act-climate-pledge>, viewed in August 2015.

55 China Banking Regulatory Commission (2012, February), *Green Credit Guidelines*, online: <http://www.cbrc.gov.cn/EngdocView.do?docID=3CE646AB629B46B9B533B1D8D9FF8C4A>, viewed in September 2015.

- **Loans**

Bank of China increased its loans to the selected companies attributable to renewable energy by 3,062% in the second half of the period of study. Its loans to the selected companies attributable to fossil fuels increased by 119%. Figure 18 shows the changes in loans provided by the Bank of China to the selected companies attributable to renewable and fossil fuels. Loans to the selected companies attributable to fossil fuels show large fluctuations, rising rapidly after 2010, before decreasing again in 2014. Loans attributable to renewable energy take off in 2011, decreasing slightly by 2014. The absolute values of loans to the selected companies attributable to renewable energy are higher than those provided by Bank of China's peer Agricultural Bank of China (see section 4.3.1), but still very low.

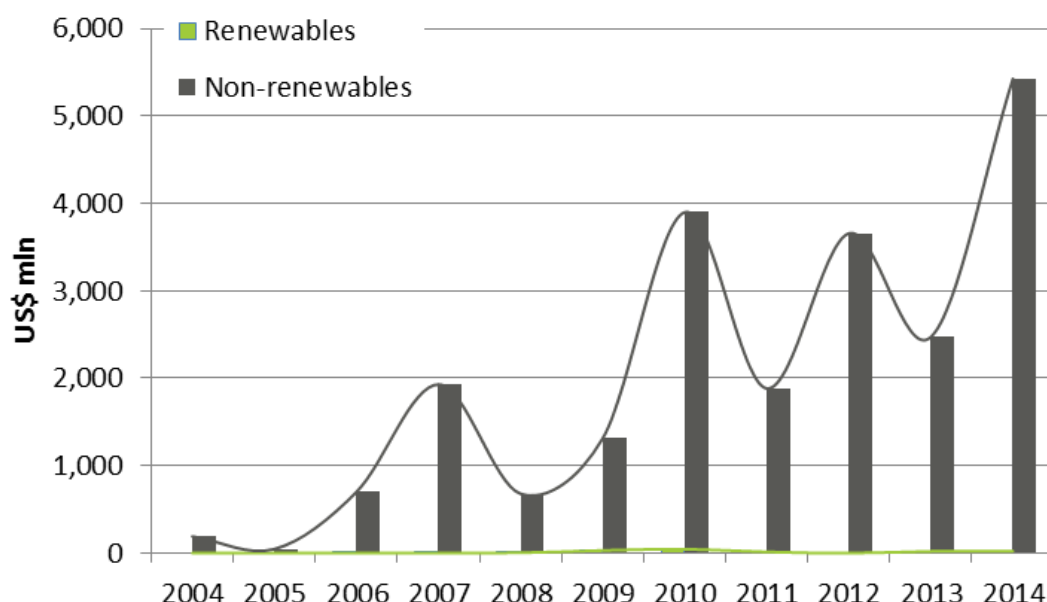
Figure 18 Bank of China loans to the selected companies (2004-2014)



- **Underwriting**

Bank of China increased its underwriting to renewable energy by 462% in the second half of the period of study. Underwriting to fossil fuels increased by 328%. It appears that the Bank of China prefers to provide underwriting services, rather than loans, as Figure 19 shows. The values of underwriting services provided by the Bank of China to the selected companies are higher than loans. Underwriting services attributable to fossil fuels fluctuate throughout the period of study but generally show an increasing trend. The Bank of China only provided minimal levels of underwriting services attributable to renewable energy, even though the 2012 Green Credit Guidelines had encouraged increased support to renewable energy.

Figure 19 Bank of China underwriting services to the selected companies (2004-2014)

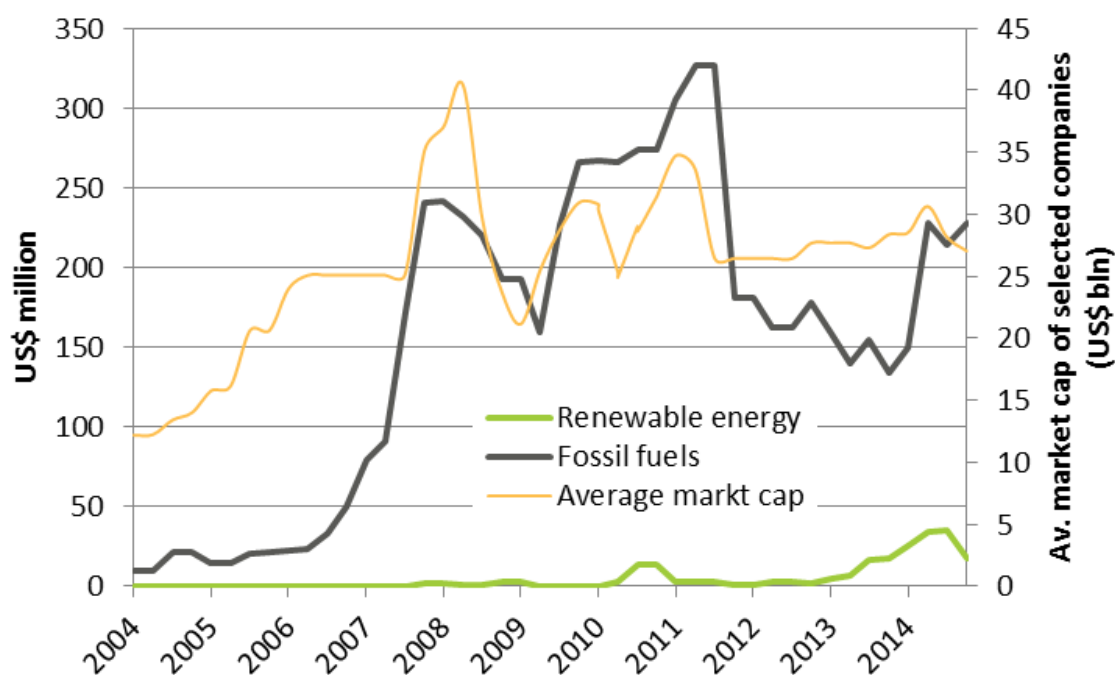


- **Shareholdings**

Bank of China increased its average annual investments in selected companies attributable to renewable energy by 1,441%. Average annual investments in selected companies attributable to fossil fuels increased by 109%. The proportion of the average total investments attributable to renewable energy increased by 3%, while the proportion attributable to fossil fuels decreased by 2%.

Bank of China's investments in selected companies attributable to fossil fuels generally follow the trends in fluctuations in the average market capitalization of the selected companies, as seen in Figure 20. Total levels of investment attributable to fossil fuels far outstrip total levels of investments in selected companies attributable to renewable energy. In 2010 and again 2013, the Bank of China temporarily increased its investments in selected companies attributable to renewable energy. These tailed off again by the third quarter of 2014.

Figure 20 Bank of China shareholdings in selected companies 2004-2014



4.3.4 Bank of Communications (China)

This section provides an overview of the financing of the Bank of Communications to the selected companies that are attributable to renewable and fossil fuels.

This research did not identify any commitments made by the Bank of Communications regarding climate change mitigation. However, the Green Credit Guidelines published by the China Banking Regulatory Commission in 2012, state “Banking institutions shall promote green credit from a strategic height, increase the support to green, low-carbon and recycling economy, fend off environmental and social risks, and improve their own environmental and social performance, thus optimizing their credit structure, improving the quality of services, and facilitating the transformation of development mode.”⁵⁶

Table 16 shows that Bank of Communications increased its total loans and underwriting energy to the selected companies attributable to renewable energy by 3,440% in the second half of the period of study, from US\$ 12 million to US\$ 433 million. In the same period it increased its financing of fossil fuels by 20%. The proportion of its total loans and underwriting to the selected companies attributable to renewable energy increased by 3%, while the proportion attributable to fossil fuels decreased by 7%.

Table 16 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	3,440%	3%

56 China Banking Regulatory Commission (2012, February), *Green Credit Guidelines*, online: <http://www.cbrc.gov.cn/EngdocView.do?docID=3CE646AB629B46B9B533B1D8D9FF8C4A>, viewed in September 2015.

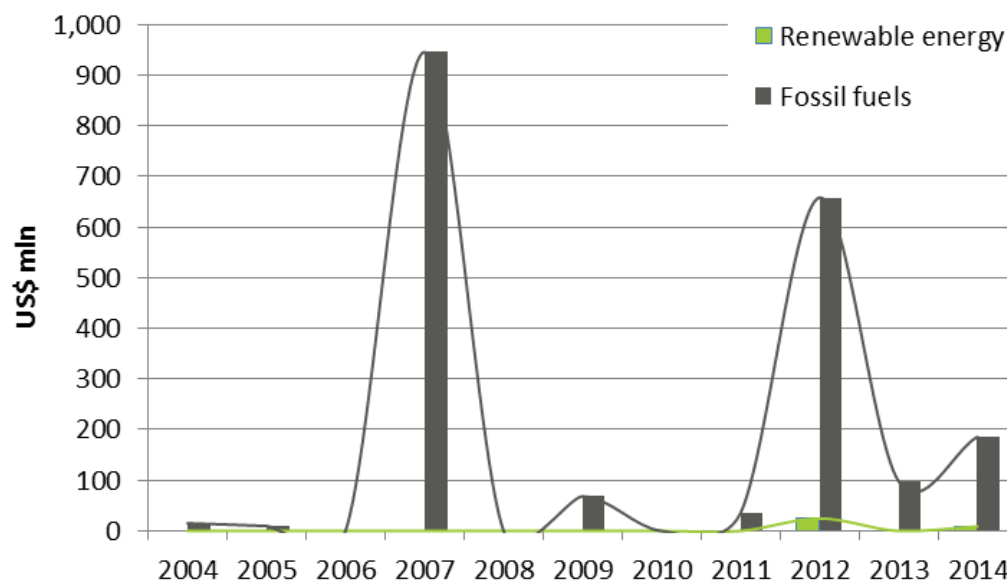
Energy source	Percent change	Proportion change
Fossil fuels	20%	-7%

- **Loans**

Figure 21 shows that Bank of Communications' loans to the selected companies attributable to fossil fuels experienced marked fluctuations throughout the period of study. They peaked in 2007, dropping during the global economic crisis, before increasing again in 2012. Having dropped again in 2013, Bank of Communications loans to the selected companies attributable to fossil fuels seem to show an upward trend by 2014.

Throughout the period of study the Bank of Communications hardly provided any loans to renewable. Only in 2012, does there seem to be a minimal contribution to renewable energy.

Figure 21 Bank of Communications loans to the selected companies (2004-2014)

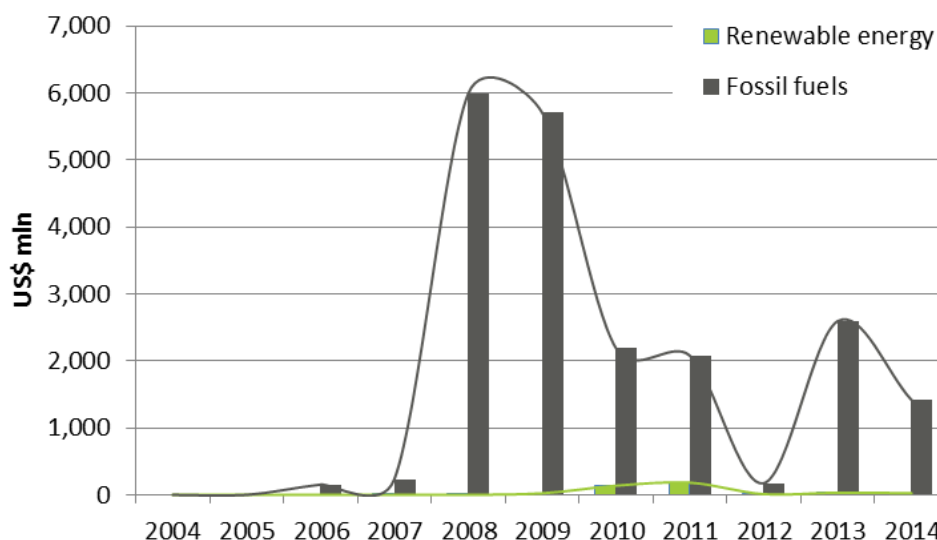


- **Underwriting**

As with the Bank of China, Bank of Communications seems to prefer providing underwriting services to providing loans (see section 4.3.3), as Figure 22 shows. During the global economic crisis Bank of Communications' underwriting services to the selected companies attributable to fossil fuels peaked at nearly US\$ 6 billion, before declining in the following years.

Underwriting services to renewable energy were minimal. In fact, these peaked in 2011, before the Green Credit Guidelines were published in 2012. The Green Credit Guidelines, thus, do not seem to have had any impact on the Bank of Communications financing attributable to renewable energy.

Figure 22 Bank of Communications underwriting services to the selected companies (2004-2014)

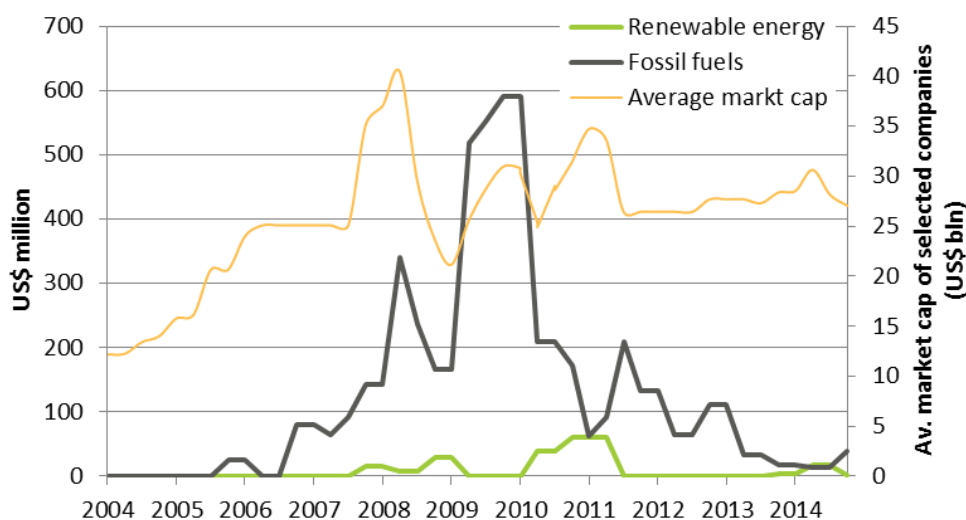


- Shareholdings**

Bank of Communications increased its average investments in selected companies attributable to renewable energy by 318% in the second half of the period of study. Average annual investments to fossil fuels increased by only 9%. The proportion of the total average annual investments in selected companies attributable to renewable energy increased by 7%, while the proportion of total average annual investments to fossil fuels decreased by 8%.

Figure 23 provides an overview of the Bank of Communications' investments in selected companies attributable to renewable and fossil fuels. Bank of Communications investments attributable to fossil fuels gradually grow from 2006 to 2010, after which they decline again. Investments attributable to renewable energy are generally negligible. However, for a brief period in 2010 and 2011, these increase markedly, before decreasing again.

Figure 23 Bank of Communications shareholdings in selected companies 2004-2014



4.3.5 Barclays (United Kingdom)

This section provides description of the financing provided by the Barclays to the selected companies that can be attributed to renewable energy and fossil fuels.

In 2008, Barclays stated that its policy was:

- “To continue to integrate environmental considerations into business decisions in line with our commitment to environmental sustainability”;
- “To manage indirect impacts in lending through Barclays Environmental and Social Risk Assessment Policy, sector-specific lending guidance and our commitment to the Equator Principles”;
- “To set targets on key aspects of our environmental performance and review them periodically. We will communicate proactively and openly about our environmental commitments and performance”.⁵⁷

In September 2009, Barclays subscribed to the investor statement of the Corporate Climate Communique, similar to the Bank of America (see section 4.3.2).⁵⁸

In 2011, Barclays stated that it had a “four year commitment from 2011 to 2015 to: Develop products and services for a low-carbon economy: this covers financing and risk management services for clients which will help direct more capital to low-carbon opportunities; Manage climate change risks: this includes collaborating with our stakeholders to minimise the risk to our own operations, as well as to our customers and clients.”⁵⁹

Table 17 shows that Barclays increased its loans and underwriting to the selected companies attributable to renewable energy by 181% in the second half of the period of study. During the same period it decreased its loans and underwriting to the selected companies attributable to fossil fuels by 7%. However, the proportion of its total loans and underwriting attributable to renewable energy increased by 4%, while the proportion attributable to fossil fuels increased by 7%.

Table 17 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	181%	4%
Fossil fuels	-7%	7%

57 Barclays (2008). *Environmental Sustainability: Our Policy Statement*, online: http://www.barclays.fr/file/documentsite/groupe/charteEnvironnementBarclays_gb.pdf, viewed in August 2015.

58 Copenhagen Communique (2009). *Signatories to the Copenhagen Communique – 2009*, online: <http://www.climatecommuniques.com/About/Copenhagen.aspx>, viewed in August 2015.

59 Barclays (2015, January). *Environmental Sustainability Policy Statement*, online: <http://www.home.barclays/content/dam/barclayspublic/docs/Citizenship/Policy-Positions/barclays-environmental-sustainability-policy.pdf>, viewed in August 2015.

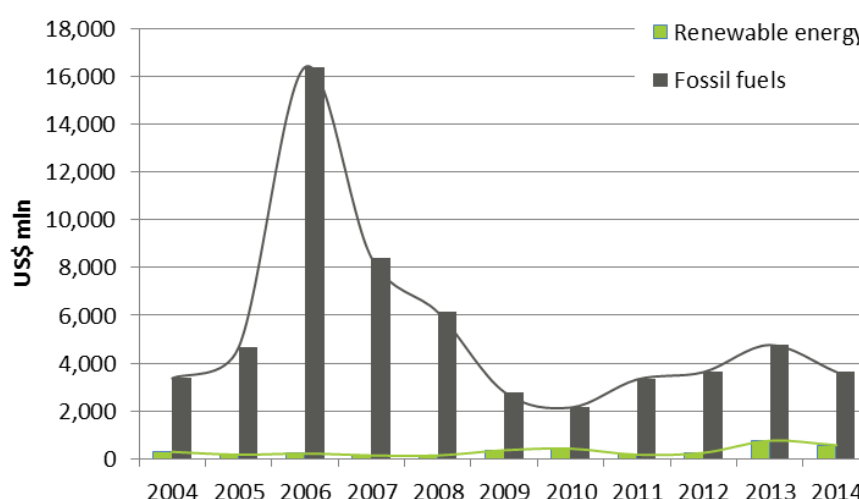
- **Loans**

Barclays increased its loans to the selected companies attributable to renewable energy by 103%, while it decreased its loans to the selected companies attributable to fossil fuels by 53% in the second half of the period of study.

Barclays' commitments, as described in the introduction of the section, seem to have had an impact on the levels of loans provided to the selected companies attributable to fossil fuels. The decline in loans to the selected companies attributable to fossil fuels in 2007 and 2008 could also be caused by the global economic crisis, particularly as there is an increase in loans attributable to fossil fuels after 2010.

Commitments made by Barclays in 2008 and again in 2011 seem to have had an impact on the levels of loans attributable to renewable energy. However, the impact seems to have been short-lived as the initial increases in loans attributable to renewable energy declined again two years after the commitments were made.

Figure 24 Barclays loans to the selected companies (2004-2014)



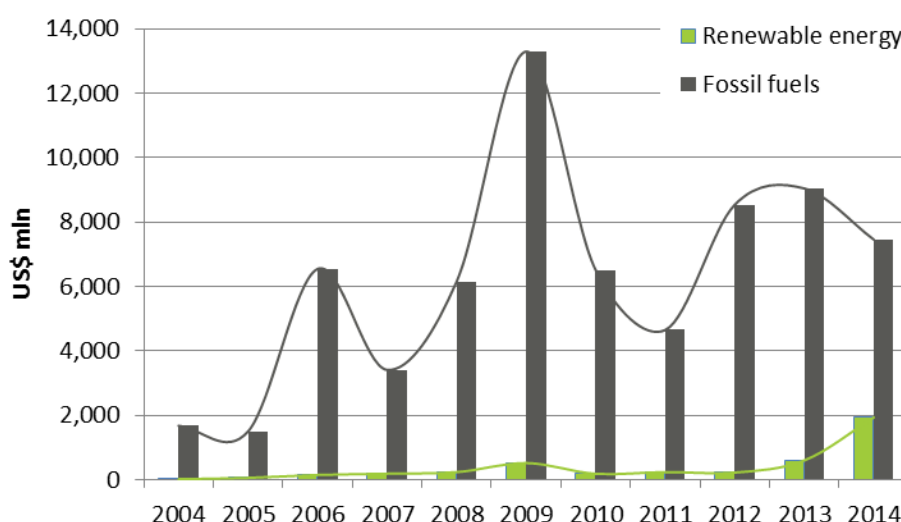
- **Underwriting**

Barclays increased its underwriting services to the selected companies attributable to renewable energy by 283% in the second half of the period of study. However, underwriting services to the selected companies attributable to fossil fuels also increased by 65%.

In line with the general trend in underwriting as identified in Chapter 3, underwriting services to the selected companies attributable to fossil fuels actually increased during the global economic crisis, as seen in Figure 25. Underwriting services attributable to fossil fuels declined from 2009 to 2011, before increasing again.

Underwriting services attributable to renewable energy gradually increased between 2004 and 2009, before declining again. However, from 2012 to 2014 underwriting services to the selected companies attributable to renewable energy show a significant upward trend while underwriting services to the selected companies attributable to fossil fuels show a downward trend.

Figure 25 Barclays underwriting services to the selected companies (2004-2014)



• Shareholdings

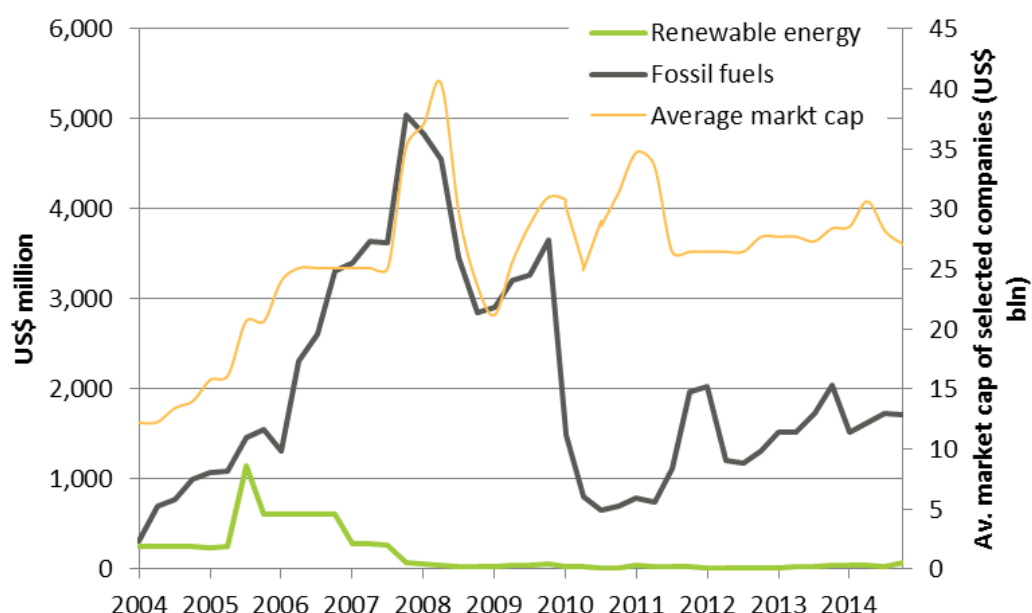
The average total investments in selected companies attributable to renewable energy by Barclays decreased by 90% in the second half of the period of study. Investments in selected companies attributable to fossil fuels also decreased by 50%. In terms of the proportion of Barclays average total investments attributable to renewable energy, there was a decrease of 5%, while there was an increase in the proportion of total investments in selected companies attributable to fossil fuels by 22%.

Barclays' investments in the shareholdings of the selected companies followed the same trend as the average market capitalization of the selected companies until 2010. In 2010, in the wake of subscribing to the investor statement of the Corporate Climate Communique, in September 2009, Barclays' investments in selected companies attributable to fossil fuels declined.⁶⁰ However, these investments increased again by the second quarter to 2011.

Investments in attributable to renewable energy increased in the second quarter of 2005. These declined again thereafter, reaching minimal levels by 2008. These investments do not seem to have enjoyed renewed support after Barclays' subscription to the investor statement of the Corporate Climate Communique in 2009.

60 Copenhagen Communique (2009). *Signatories to the Copenhagen Communique – 2009*, online: <http://www.climatecommuniques.com/About/Copenhagen.aspx>, viewed in August 2015.

Figure 26 Barclays shareholdings in selected companies 2004-2014



4.3.6 BNP Paribas (France)

This section provides an analysis of the financing provided by the BNP Paribas to the selected companies that can be attributed to renewable energy and fossil fuels.

In 2009, BNP Paribas stated that “BNP Paribas Asset Management (BNP PAM) encourages companies to consider climate change issues in their investment decisions.”⁶¹

In 2010, BNP Paribas created a Climate Change Steering Committee “to identify the risks and opportunities related to climate change and address ways in which to support the transition to a low carbon economy.” The bank also endorsed the Climate Principles in 2010. BNP Paribas also discloses its carbon information to the Carbon Disclosure Project.⁶²

BNP Paribas, in 2013, stated “BNP Paribas has made combating climate change the cornerstone of its environmental responsibility. To help tackle this critical issue for ecosystems, communities and the global economy, the Group seeks to reduce the direct and indirect impact of its business activities. Meanwhile, the BNP Paribas Foundation supports scientific research into the fundamental mechanisms of the world’s climate and the impact of their disruption.”⁶³

In 2014, BNP Paribas stated that “[a]mong its environmental initiatives BNP Paribas has chosen to prioritise its contribution by combating climate change. The Group aims to reduce the environmental impacts resulting indirectly from its banking activities and directly from its own operations. In practical terms, BNP Paribas has 3 commitments: finance the transition to renewable energy; reduce its own environmental footprint (the target to reduce CO2 emissions per employee by 10% between 2012 and 2015 has almost been reached); and support research into climate change.”⁶⁴

61 BNP Paribas (2010, July), *Report on Environmental and Social Responsibility 2009*, p. 12.

62 BNP Paribas (2011, May), *2010 Corporate Social Responsibility Report*, p. 14-15.

63 BNP Paribas (2014, February), *2013 Facts and Figures*, p. 53.

64 BNP Paribas (2015, June), *2014 Annual Report*, p. 8-9.

More recently, BNP Paribas stated that, “[i]n 2015, the year that Paris will be hosting the International Climate Conference, BNP Paribas will be making an even greater commitment to financing the energy transition by mobilising all resources available to it. And in this way we will continue to make progress as a responsible bank.”⁶⁵

BNP Paribas is member of UNEP Finance Initiative and signatory to the UN Principles for Responsible Investment.

Table 18 shows that BNP Paribas’ total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects decreased by 28%, while loans and underwriting to the selected companies attributable to fossil fuels decreased by 20%. As a proportion of total loans and underwriting, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects did not increase in the second half of the period of study. The proportion of loans and underwriting to the selected companies attributable to fossil fuels of the total loans and underwriting increased by 6% in the second half of the period of study. This undermines the commitments BNP Paribas has made to combat climate change and finance renewable energy.

Table 18 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

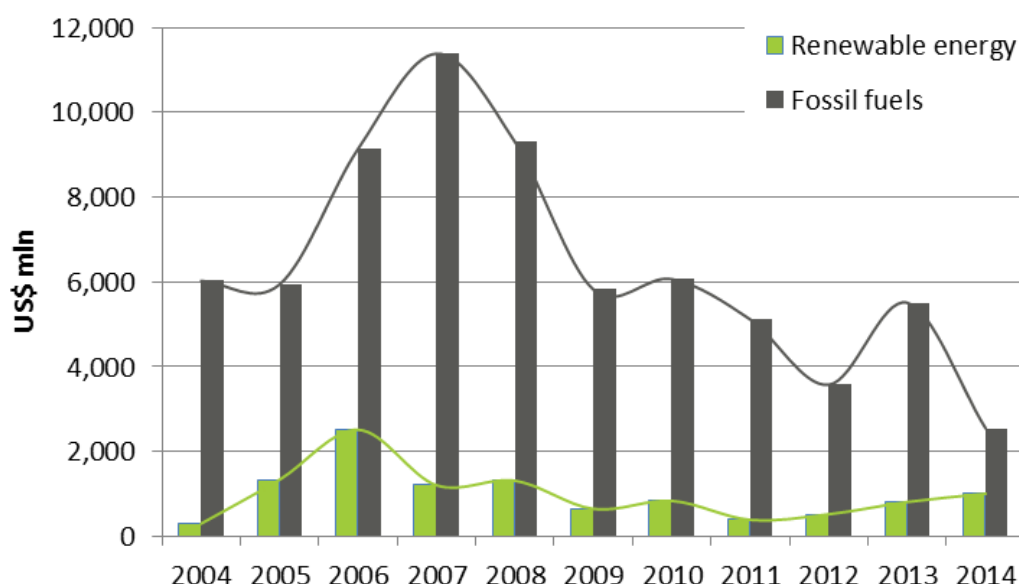
Energy source	Percent change	Proportion change
Renewable energy	-28%	0%
Fossil fuels	-20%	6%

- **Loans**

BNP Paribas provided 44% fewer loans to the selected companies attributable to renewable energy in the second half of the period of study. Loans to the selected companies attributable to fossil fuels decreased by 42%. Figure 27 shows that BNP Paribas provided more than US\$ 2 billion in loans to the selected companies attributable to renewable energy in 2006. However, levels have fallen to between US\$ 300 million and US\$ 1 billion ever since. After a height of US\$ 12 billion in 2007, loans to the selected companies attributable to fossil fuels have gradually been decreasing. Loans to the selected companies attributable to fossil fuels reached a low of approximately US\$ 2.5 billion in 2014.

65 BNP Paribas (2015, June), *2014 Corporate Social Responsibility Report*, p. 4.

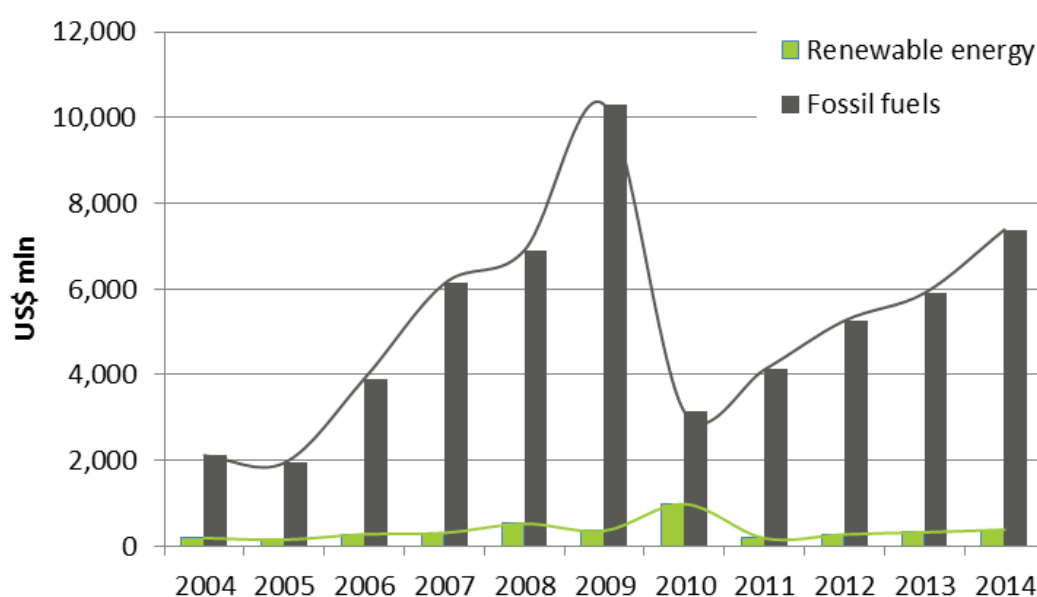
Figure 27 BNP Paribas loans to the selected companies (2004-2014)



- **Underwriting**

Underwriting to renewable energy increased by 43% in the second half of the period of study, while underwriting to fossil fuels increased by a lesser 18%. Figure 28 shows that underwriting to renewable energy has not exceeded US\$ 1 billion, but has generally fluctuated between US\$ 250 million and US\$ 400 million. The peak in renewable energy financing in 2010 did not last. Underwriting to fossil fuels, on the other hand, has generally been over US\$ 4 billion. After a decline in 2010 underwriting to fossil fuels has been on a concerning upward trajectory.

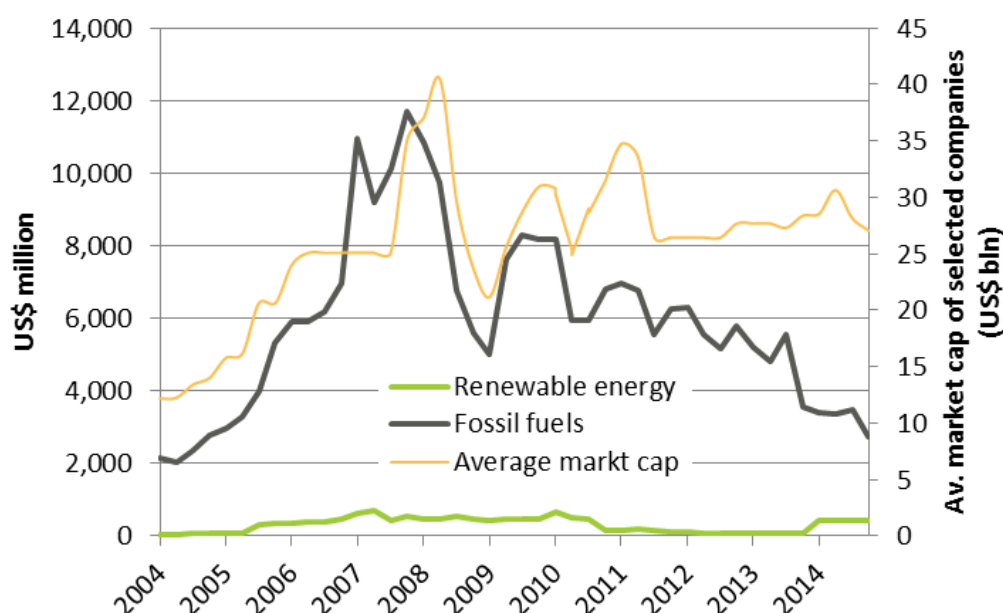
Figure 28 BNP Paribas underwriting services to the selected companies (2004-2014)



- **Shareholdings**

BNP Paribas' total average annual investments in selected companies attributable to renewable energy declined 25% in the second half of the period of study. Total average annual investments in selected companies attributable to fossil fuels decreased by a lesser 13%, but seem to be on a steadily declining trend since 2010. As a proportion of total average annual investments, investments in selected companies attributable to renewable energy increased by 2%, while the proportion of investments in selected companies attributable to fossil fuels increased by 50%. Figure 29 shows that average annual investments in selected companies attributable to renewable energy did not reach above US\$ 400 million, while investments in selected companies attributable to fossil fuels have always been over US\$ 2 billion.

Figure 29 BNP Paribas shareholdings in selected companies 2004-2014



4.3.7 China Construction Bank (China)

This section provides an analysis of the financing provided by the China Construction Bank to the selected companies that can be attributed to renewable energy and fossil fuels. This study did not identify any commitments by the China Construction Bank regarding climate change mitigation. However, the Green Credit Guidelines published by the China Banking Regulatory Commission in 2012, state “Banking institutions shall promote green credit from a strategic height, increase the support to green, low-carbon and recycling economy, fend off environmental and social risks, and improve their own environmental and social performance, thus optimizing their credit structure, improving the quality of services, and facilitating the transformation of development mode.”⁶⁶

66 China Banking Regulatory Commission (2012, February), *Green Credit Guidelines*, online: <http://www.cbrc.gov.cn/EngdocView.do?docID=3CE646AB629B46B9B533B1D8D9FF8C4A>, viewed in September 2015.

Table 19 shows that China Construction Bank increased its loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects by 192%. However, loans and underwriting to the selected companies attributable to fossil fuels increased by 252% in the second half of the period of study. The proportion of total loans and underwriting to the selected companies attributable to renewable energy decreased by 1%, while loans and underwriting to the selected companies attributable to fossil fuels decreased by 6%. This indicates that loans and underwriting to energy sources not included in the scope of this research increased (see section 2.3.3).

Table 19 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

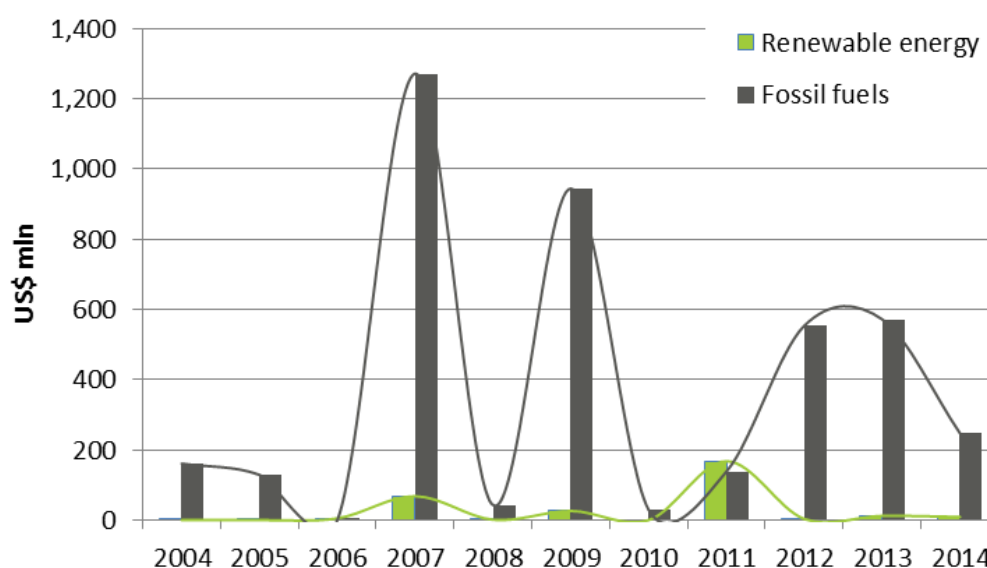
Energy source	Percent change	Proportion change
Renewable energy	192%	-1%
Fossil fuels	252%	-6%

- Loans**

China Construction Bank increased the loans to the selected companies attributable to renewable energy by 136% in the second half of the period of study. It also decreased its loans to the selected companies attributable to fossil fuels by 3%.

Figure 30 provides an outline overview of China Construction Bank's loans to the selected companies for the period 2004-2014 attributable to renewable energy and fossil fuels. Remembering that China's Green Credit Guidelines were published in February 2012, it is interesting to note that China Construction Bank's loans to the selected companies attributable to fossil fuels increased in 2012 and 2013. Loans attributable to renewable energy fluctuated, but were essentially negligible apart from in 2011 when they exceeded loans to the selected companies attributable to fossil fuels.

Figure 30 China Construction Bank loans to the selected companies (2004-2014)

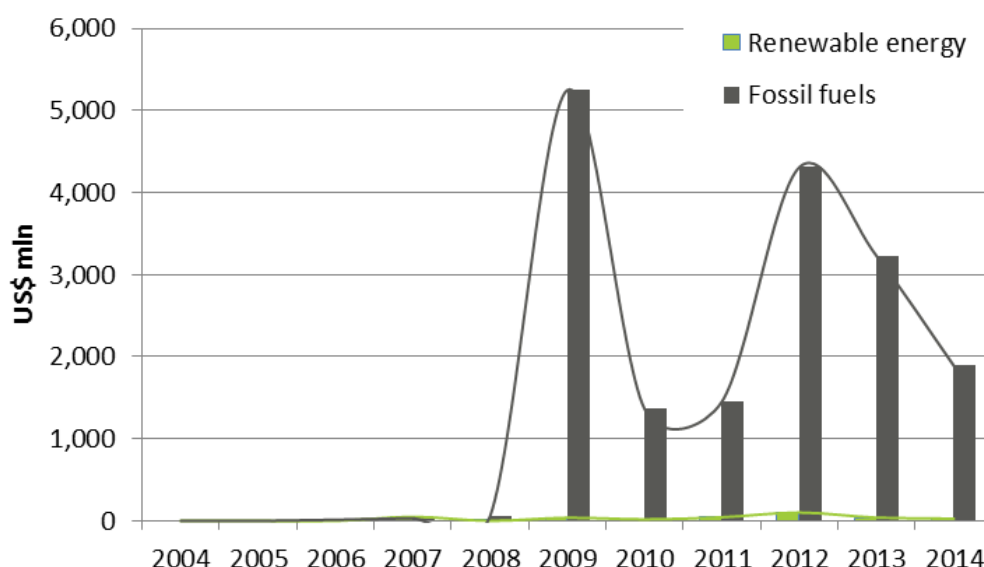


- Underwriting**

In the second half of the period of study, China Construction Bank increased its underwriting services to the selected companies attributable to renewable energy, and renewable energy projects, by 263%. Underwriting to fossil fuels increased by 446%.

In line with the general trend in financing fossil fuels in the immediate aftermath of the global economic crisis, China Construction Bank's underwriting services to the selected companies attributable to fossil fuels increased in 2009, as shown in Figure 31. Its underwriting services to the selected companies attributable to fossil fuels dipped in 2010 and 2011, increasing again in 2012, before tapering off by 2014. It remains a question for China Construction Bank whether the Green Credit Guidelines published in 2012 have had an impact on its underwriting services, because even though underwriting for fossil fuels decreased after 2012, underwriting for renewable energy did not increase and remained very low.

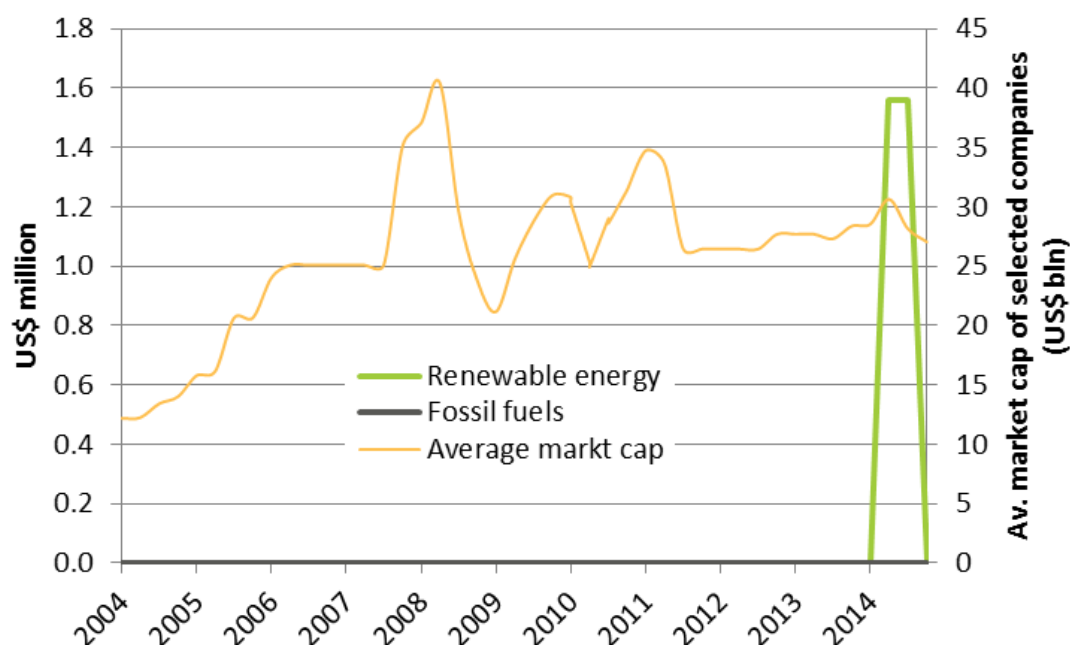
Figure 31 China Construction Bank underwriting services to the selected companies (2004-2014)



• Shareholdings

This research did not identify many shareholdings attributable to China Construction Bank, therefore no comparison can be made between the first half of the period of study and the second. This does not exclude the possibility that China Construction Bank is investing in companies outside the scope of the study, or is investing in companies in the scope of this study through indirect asset management subsidiaries in which the bank does not own majority shares. The investments in selected companies attributable to renewable energy in 2014 are all in wind turbine manufacturing Xinjiang Goldwind Science and Technology.

Figure 32 China Construction Bank shareholdings in selected companies 2004-2014



4.3.8 Citigroup (United States)

This section provides description of the financing provided by Citigroup to the selected companies that can be attributed to renewable energy and fossil fuels.

In May 2007 “the bank announced a 10-year, \$50 billion initiative to address global climate change through investments, financings and related activities that support the commercialization and growth of alternative energy and clean technology in markets around the world...”⁶⁷

In February 2015, Citi announced the “\$100 Billion Environmental Finance Initiative: Citi will lend, invest and facilitate \$100 billion over 10 years (2014-2023) towards activities that reduce the impacts of climate change and create environmental solutions that benefit people and communities. This goal is in addition to our previous \$50 billion climate finance goal, which we met three years early in 2013.”Citi’s previous \$50 billion goal was announced in 2007 and was met three years early in 2013.⁶⁸

Table 20 shows the Citigroup’s total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects increased by 34% in the second half of the period of study. Loans and underwriting to the selected companies attributable to fossil fuels, however, decreased. In terms of the proportion of total loans and underwriting services to the selected companies attributable to renewable energy, there was a 3% increase in the second half of the period of study. The proportion of loans and underwriting attributable to fossil fuels remained the same. It thus appears that Citigroup’s commitments had an effect, however slight, on its financing to renewable energy.

67 Citigroup (2010, October 14), “Citi wins ‘Most Innovative Investment Bank for Climate Change and Sustainability’ award from The Banker magazine for the second year”, online: <http://www.citi.com/citi/press/2010/101018c.htm>, viewed in September 2015.

68 Citigroup (2015, February 18), “Citi announces \$100 billion, 10-year commitment to finance sustainable growth”, online: <http://www.citigroup.com/citi/news/2015/150218a.htm>, viewed in September 2015.

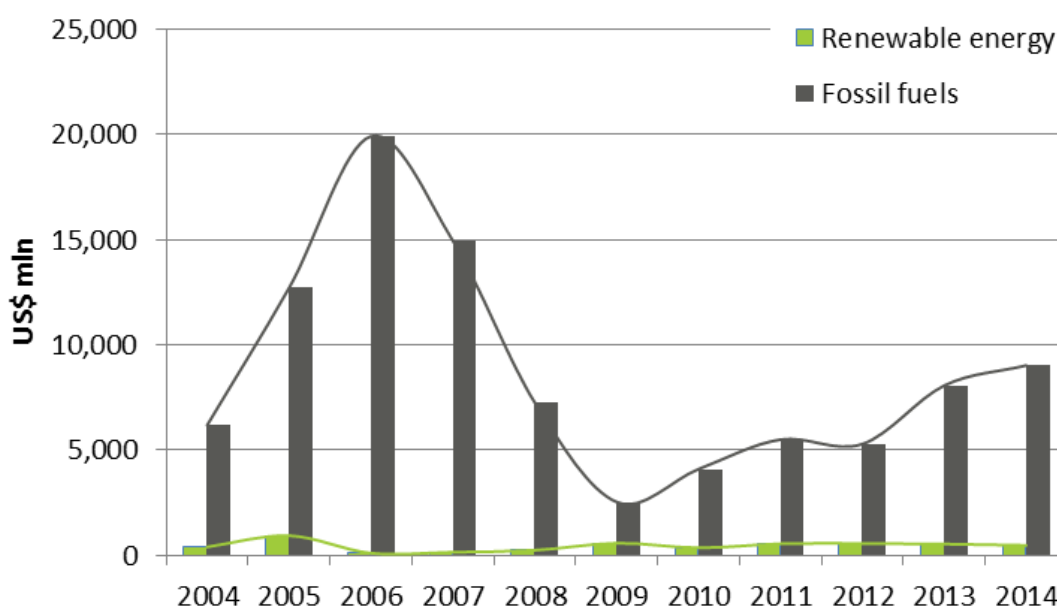
Table 20 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	34%	3%
Fossil fuels	-25%	0%

- Loans**

Citigroup's loans to the selected companies attributable to renewable energy increased by 30% in the second half of the period of study. Loans to the selected companies attributable to fossil fuels decreased by -47%. Figure 33 provides a more detailed overview of the changes in Citigroup's loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Loans to the selected companies attributable to fossil fuels decreased sharply during the global economic crisis. They have since been gradually increasing. Loans to the selected companies attributable to renewable energy have been consistently low, hardly ever reaching more than US\$ 500 million. Since 2009 loans to the selected companies attributable to renewable energy have fluctuated around the US\$ 500 million mark.

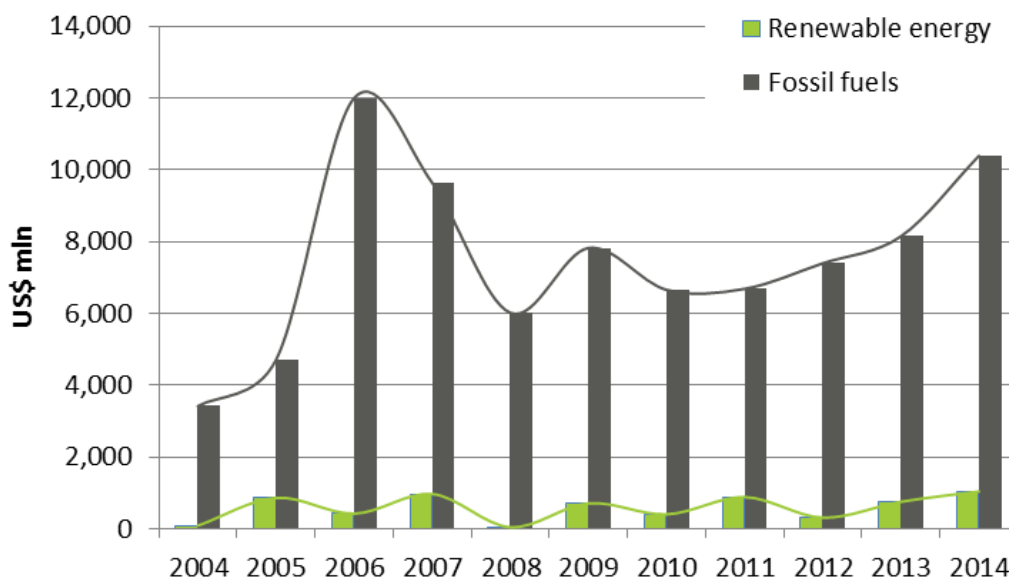
Figure 33 Citigroup loans to the selected companies (2004-2014)



- Underwriting**

Citigroup provided 37% more underwriting services to the selected companies attributable to renewable energy in the second half of the period of study than in the first. Underwriting to fossil fuels, however, also increased by 9%. Figure 34 shows that underwriting to renewable energy generally fluctuated between US\$ 400 million and US\$ 900 million, with no clear increasing trend. While these figures might seem high, they pale in comparison to the underwriting services provided to the selected companies attributable to fossil fuels. Although underwriting to fossil fuels was affected by the economic crisis, they have been consistently above US\$ 6 billion since 2006. Underwriting to fossil fuels has shown a concerning upward trend since 2010.

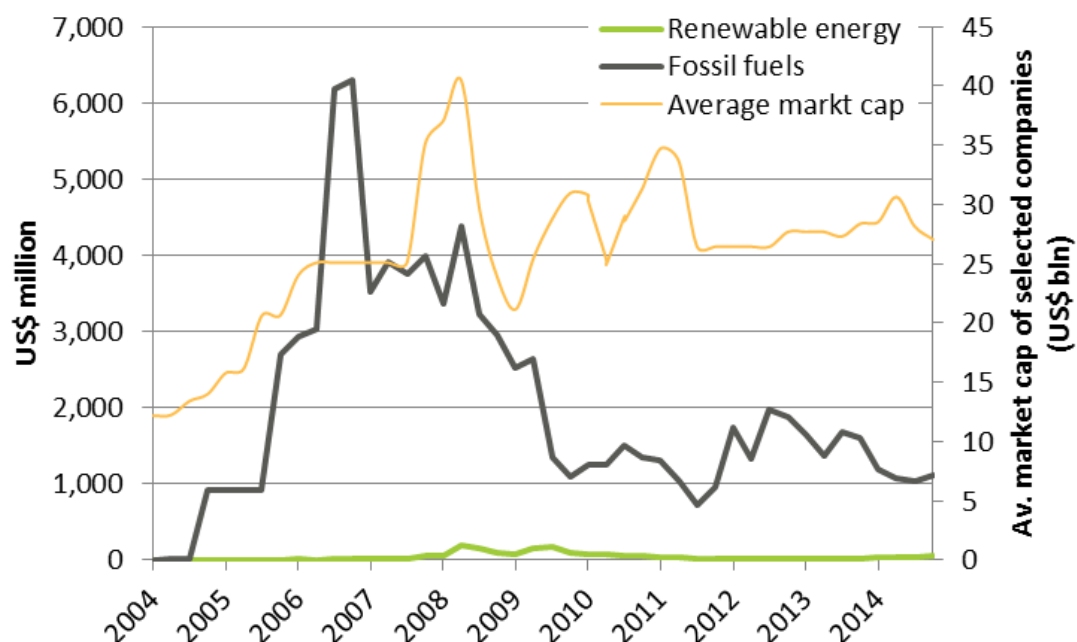
Figure 34 Citigroup underwriting services to the selected companies (2004-2014)



- **Shareholdings**

Citigroup's average annual investments in selected companies attributable to renewable energy decreased in the second period of study by 13%. Average annual investments attributable fossil fuels also decreased by 47%. Figure 35 shows that average annual investments in selected companies attributable to renewable energy were consistently low, hardly ever exceeding US\$ 100 million. Average annual investments in selected companies attributable to fossil fuels have generally been over US\$ 1 billion throughout the period of study.

Figure 35 Citigroup shareholdings in selected companies 2004-2014



4.3.9 Crédit Agricole (France)

This section provides a description of the financing provided by Crédit Agricole to the selected companies that can be attributed to renewable energy and fossil fuels.

Crédit Agricole says of itself, “Crédit Agricole is one of the major players in the energy transition. It aims to help support the emergence of a development model that is less energy consuming and more respectful of the environment.”⁶⁹

Crédit Agricole, in 2009, stated that it “continues to make climate change prevention a priority both internally and externally, following the Grenelle environment roundtable and in the spirit of the Copenhagen summit. To this end, the Group’s efforts are focused mainly in three directions: indirect impacts, green product range and direct impacts.”⁷⁰

In 2010, Crédit Agricole stated that “For several years, the Crédit Agricole Group has been committed to reducing its negative environmental impacts. This commitment is reflected, in particular, in its participation since 2003 in the United Nations Global Compact, as well as the signature of the Equator Principles in 2003 by Crédit Agricole CIB and the signature of the PRIs in 2006 by Amundi. The Group has also made tackling climate change one of the main pillars of its environmental policy. This commitment was reinforced in late 2008 with the adoption of the Charter of Climate Principles for the financial sector, coordinated by the Climate Group.”⁷¹

69 Crédit Agricole (2015, March), *Registration Document and Annual Report 2014*, p. 30.

70 Crédit Agricole (2010, March), *Registration Document and Annual Report 2009*, p. 228.

71 Crédit Agricole (2011, March), *Registration Document and Annual Report 2010*, p. 59.

At the UNO Climate Summit in September 2014, Jean-Yves Hoher, Chief Executive Officer of Crédit Agricole, “made four commitments to be achieved by end-2015: to structure over US\$20 billion in new financing by 2015 to combat climate change; to measure and publish the carbon footprint of its financing; for sectors representing a total of 80% of the carbon emissions financed by the bank, to apply sector policies incorporating analysis and exclusion criteria governing the selection of financing and investments; to put forward new partnerships to finance environmental projects.”⁷²

Crédit Agricole is a participant in the Carbon Disclosure Project and a signatory to the Climate Principles.

Table 21 shows that the total loans and underwriting to the selected companies attributable to renewable energy provided by Crédit Agricole actually decreased by 7% in the second half of the period of study. Loans and underwriting to the selected companies attributable to fossil fuels, on the other hand, increased by 8%. In terms of proportions of total loans and underwriting, financing to renewable energy did not change. However, the proportion of total loans and underwriting attributable to fossil fuels actually increased by 7%. These indicators suggest that Crédit Agricole is not living up to its own standards.

Table 21 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

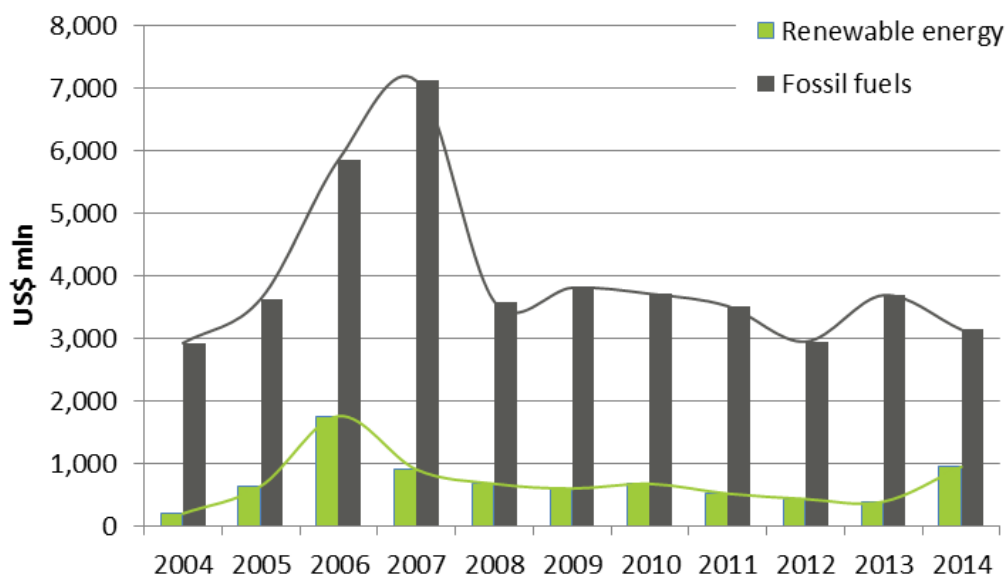
Energy source	Percent change	Proportion change
Renewable energy	-7%	0%
Fossil fuels	8%	7%

- **Loans**

Crédit Agricole’s loans to the selected companies attributable to renewable energy decreased by 27% in the second half of the period of study. Loans to the selected companies attributable to fossil fuels decreased by 24%. Figure 36 shows that the economic crisis had a marked effect on loans for fossil fuels, which have since fluctuated between US\$ 3 and US\$ 4 billion. Loans to the selected companies attributable to renewable energy have fluctuated below US\$ 1 billion, but have shown an upward trend since 2013.

72 Crédit Agricole (2015, March), *Registration Document and Annual Report 2014*, p. 32.

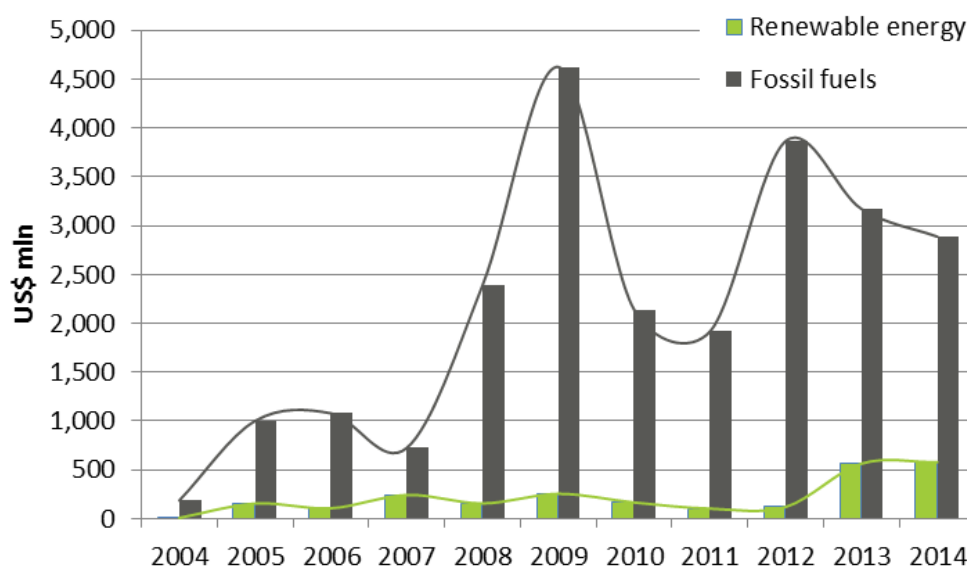
Figure 36 Crédit Agricole loans to the selected companies (2004-2014)



- **Underwriting**

Crédit Agricole's underwriting services to renewable energy increased by 108% in the second half of the period of study. Underwriting to fossil fuel, however, increased by a higher 112%. Figure 37 shows that Crédit Agricole's underwriting to renewable energy have generally fluctuated below US\$ 500 million, only rising above this figure in recent years. Underwriting to fossil fuels has generally been above US\$ 2 billion since 2008, though suffering a significant dip in 2010-2011.

Figure 37 Crédit Agricole underwriting services to the selected companies (2004-2014)

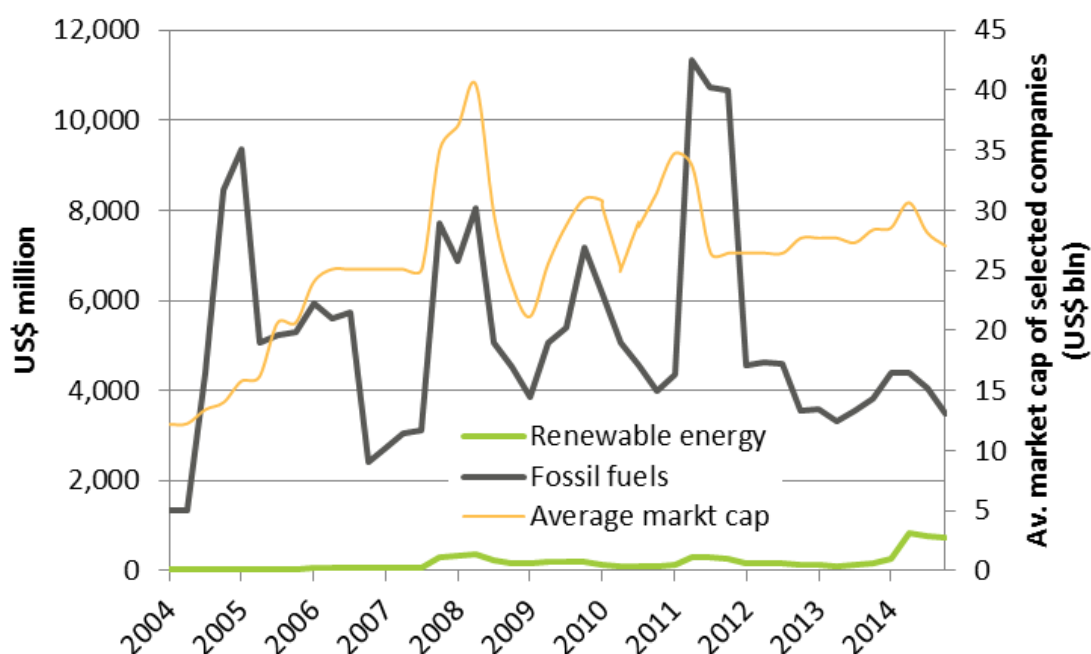


- **Shareholdings**

Total annual average investments in the shareholdings of the selected companies attributable to renewable energy increased by 95% in the second half of the period of study. Total annual average investments in selected companies attributable to fossil fuels increased by 1%. As a proportion of total shareholdings in selected companies, renewable energy increased by 1% while fossil fuels decreased by 5%.

Figure 38 shows that investments in selected companies attributable to fossil fuels generally followed the fluctuations in average market capitalization of the selected companies. Shareholdings of fossil fuels companies have been consistently above US\$ 3 billion, while investments in selected companies attributable to renewable energy have yet to rise above US\$ 850 million.

Figure 38 Crédit Agricole shareholdings in selected companies 2004-2014



4.3.10 Credit Suisse (Switzerland)

This section provides an overview of the financing provided by the Credit Suisse to the selected companies that can be attributed to renewable energy and fossil fuels.

Credit Suisse is one of the few Western financial institutions for which no commitments to climate change mitigation were identified. Its national peer, UBS, has made climate change commitments (see section 4.3.23).

Table 22 shows that Credit Suisse increased its total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects by 92% in the second half of the period of study. Loans and underwriting to the selected companies attributable to fossil fuels actually decreased in the period of study. Loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects as a proportion of total loans and underwriting to the selected companies increased by 4%. The proportion of total loans and underwriting attributable to fossil fuels decreased by 11%.

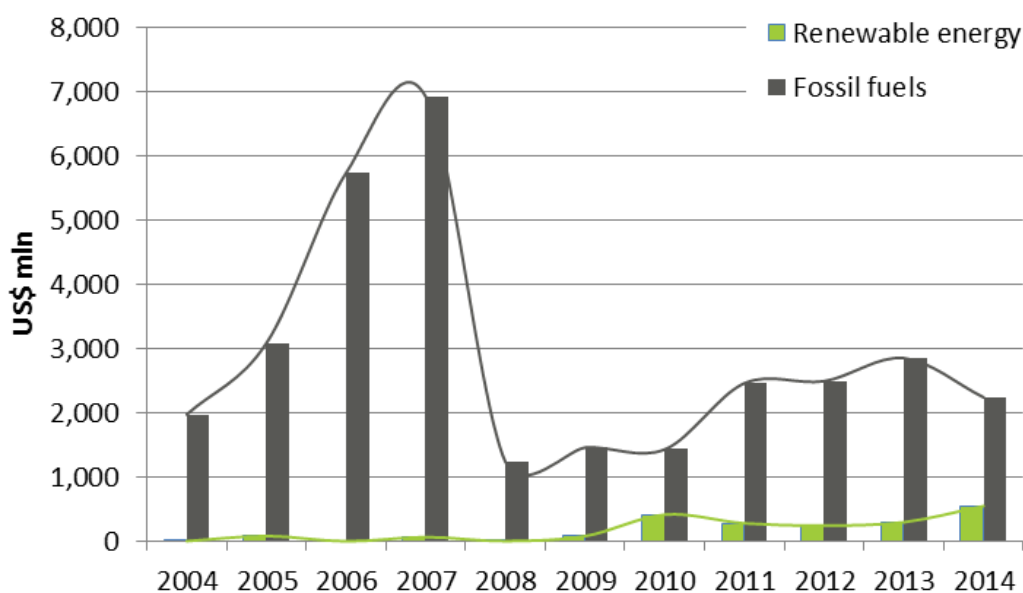
Table 22 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	92%	4%
Fossil fuels	-25%	-11%

- Loans**

Loans to the selected companies attributable to renewable energy increased by 855%, while loans to the selected companies attributable to fossil fuels decreased by 38%. From Figure 39 it is apparent that the global economic crisis had a marked impact on Credit Suisse's lending for fossil fuels. Its loans to the selected companies attributable to fossil fuels gradually started to recover in 2009. Loans for renewable energy fluctuated at minimal levels prior to 2010, but have shown an upward trend since 2013.

Figure 39 Credit Suisse loans to the selected companies (2004-2014)

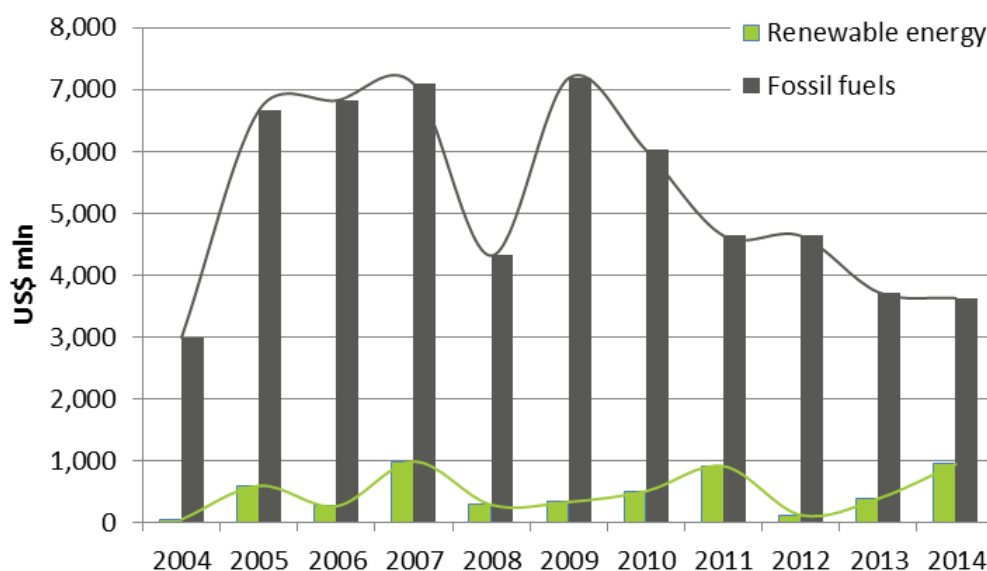


- Underwriting**

Credit Suisse provided 30% more underwriting services to renewable energy in the second half of the period of study than the first. Underwriting for fossil fuels decreased by 17%. In line with general trend identified for other top 25 financial institutions, underwriting services attributable to fossil fuels increased during the economic crisis, as seen in Figure 40. However, underwriting to the selected companies attributable to fossil fuels has been declining since its peak in 2009.

Credit Suisse's underwriting services to renewable energy are generally higher than its loans to the selected companies attributable to renewable energy and renewable energy projects. Underwriting services to renewable energy have fluctuated throughout the period of study, suffering during the global economic crisis, but picking up by 2009 before declining again in 2012. It is positive to note that Credit Suisse's underwriting services to renewable energy have been on an upward trend again since 2012, reaching the second highest levels in the period of study in 2014.

Figure 40 Credit Suisse underwriting services to the selected companies (2004-2014)

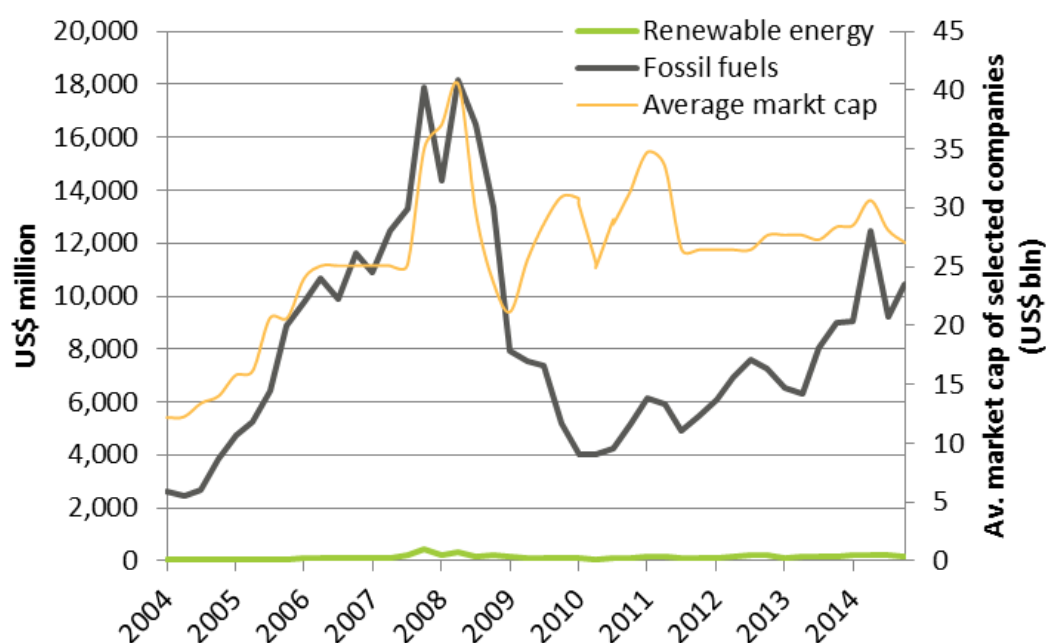


• Shareholdings

Average annual investments to renewable energy increased by 12% in the second half of the period of study. Average annual investments to fossil fuels decreased by 30%. Credit Suisse's investments in selected companies attributable to fossil fuels decreased rapidly in 2009, as seen in Figure 41. This was contrary to the developments in the average market capitalization of the selected companies. However, investments attributable to fossil fuels gradually grew again until year-end 2013.

Investments in shareholdings of the selected companies by Credit Suisse attributable to renewable energy were minimal throughout the period of study, particularly when compared with the billions of investments in selected companies attributable to fossil fuels.

Figure 41 Credit Suisse shareholdings in selected companies 2004-2014



4.3.11 Deutsche Bank (Germany)

This section provides a description of the financing provided by the Deutsche Bank to the selected companies that can be attributed to renewable energy and fossil fuels.

Table 23 shows that Deutsche Bank's total loans and underwriting attributable to renewable energy decreased by 27% in the second period of study. Financing to fossil fuels increased by 8%. As a proportion of total loans and underwriting, financing to renewable energy decreased by 1%, while the proportion of loans and underwriting to the selected companies attributable to fossil fuels of the total loans and underwriting increased by 13%.

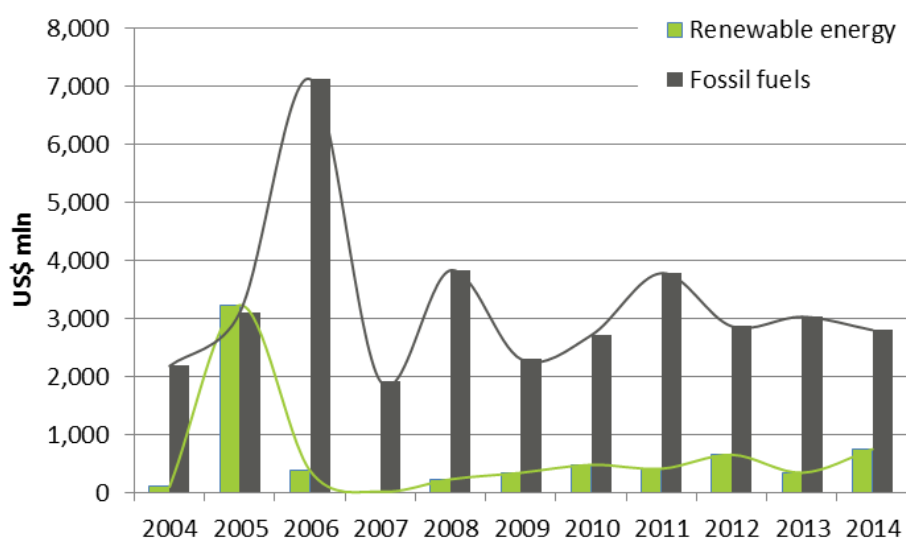
Table 23 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	-27%	-1%
Fossil fuels	8%	13%

• Loans

In the second half of the period of study, Deutsche Bank decreased its loans to the selected companies attributable to renewable energy by 32%. Loans to the selected companies attributable to fossil fuels also decreased, but by a lesser 15%. Figure 42 shows that loans to the selected companies attributable to renewable energy reached a high point of over US\$ 3 billion in 2005. These have since not risen above US\$ 750 million, fluctuating between US\$ 300 and US\$ 400 million. Loans to the selected companies attributable to fossil fuels on the other hand, peaked at over US\$ 7 billion in 2006. They have since declined, fluctuating between US\$ 2 and US\$ 4 billion.

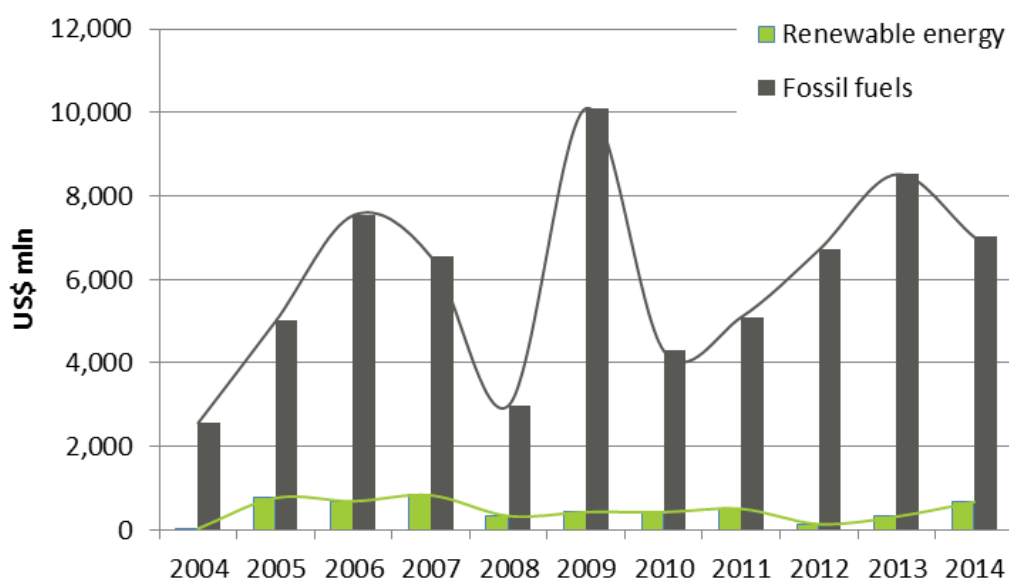
Figure 42 Deutsche Bank loans to the selected companies (2004-2014)



- **Underwriting**

In the second half of the period of study Deutsche Bank decreased its underwriting to renewable energy by 27%. During the same period Deutsche Bank increased its underwriting to fossil fuels by 24%. Figure 43 shows that underwriting to renewable energy has been consistently low. It has fluctuated between approximately US\$ 300 million and US\$ 400 million, showing a slight increase again in 2014. Underwriting to fossil fuels, on the other hand, has generally been over US\$ 4 billion, with an upward trend since 2010.

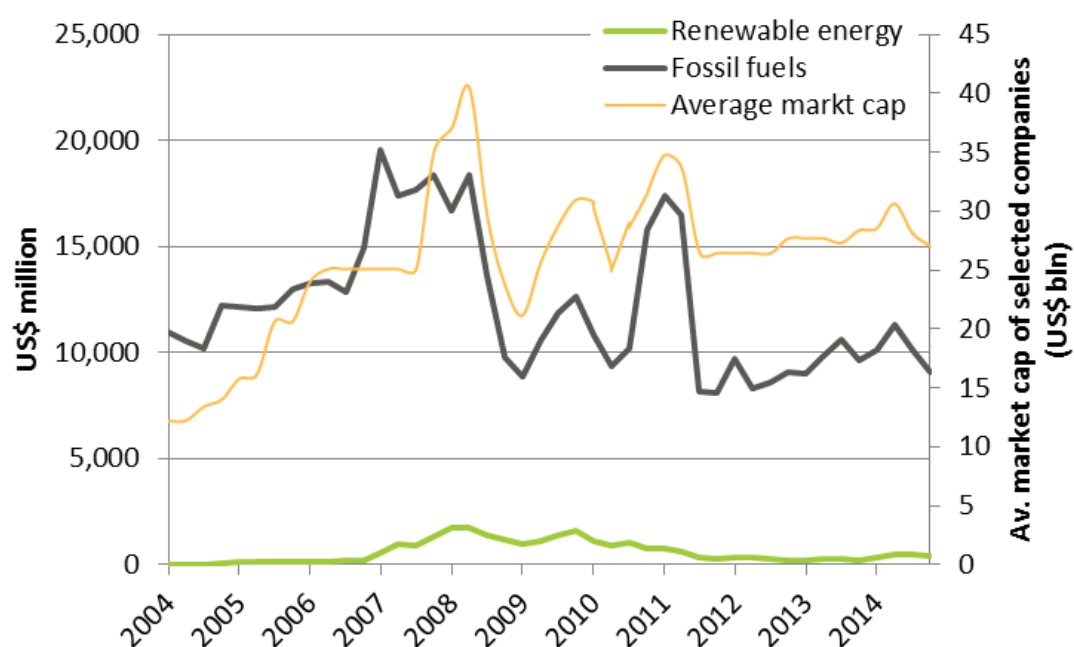
Figure 43 Deutsche Bank underwriting services to the selected companies (2004-2014)



- **Shareholdings**

Deutsche Bank's average annual shareholdings attributable to renewable energy decreased by 18% in the second half of the period of study. Average annual investments in selected companies attributable to fossil fuels decreased by 20%. Figure 44 shows that Deutsche Bank's investments in selected companies attributable to fossil fuels have generally followed the trends in fluctuations of the average market capitalization of the selected companies. Average annual investments in selected companies attributable to fossil fuels have generally been over US\$ 10 billion while average annual investments in selected companies attributable to renewable energy only rose over US\$ 1 billion in between 2007 and 2010. They have since declined to under US\$ 500 million.

Figure 44 Deutsche Bank shareholdings in selected companies 2004-2014



4.3.12 HSBC (United Kingdom)

This section provides description of the financing provided by the HSBC to the selected companies that can be attributed to renewable energy and fossil fuels.

HSBC has recognized the commercial potential of supporting the transition to a low carbon economy. It states "Business solutions that reduce carbon emissions or enable society to adapt to climate change bring environmental and social benefits as well as a commercial return. We call this climate business. These types of opportunities arise in the solar, wind, biomass, energy efficiency, low-carbon transport and water sectors."⁷³ This is not a commitment to mitigating climate change, but it should serve as an indication of its increase in financing to renewable energy.

73 HSBC (2014.), *Sustainability Report 2013*, p. 12.

In 2006, HSBC Global Asset Management signed the UN-PRI commitment.⁷⁴ In 2006, “HSBC launched the Carbon Finance Strategy to support clients who are developing clean technologies and non-fossil fuel energy solutions that are both technically and commercially viable. We have also developed sustainability-focused business in areas of low-carbon energy, water infrastructure, sustainable forestry and related agricultural commodities, and have identified business development opportunities by geography, industry sector and customer group”.⁷⁵

In 2006, HSBC introduced its Energy Sector Policy, in which “HSBC adopts a cautious approach to activities which contribute significantly to climate change and which have a long asset life inconsistent with the transition to a low carbon economy”.⁷⁶

In 2010, HSBC states itself as “a leader in public markets equity-related wind financings for international companies, including the largest wind turbine equity raising since 2010 as part of the €1.4bn Vestas refinancing”.⁷⁷

Table 24 shows that there is some credence to the commitments made by HSBC. The bank increased its loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects by 181% in the second half of the period of study. Loans and underwriting to the selected companies attributable to fossil fuels increased by 18%. As a proportion of total loans and underwriting, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects increased by 5% while the proportion of loans and underwriting to the selected companies attributable to fossil fuels increased by 7%.

Table 24 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	181%	5%
Fossil fuels	18%	7%

• Loans

Loans to the selected companies attributable to renewable energy increased by 202% in the second half of the period of study. Loans to the selected companies attributable to fossil fuels did not change. Figure 45 provides an overview of HSBC loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels in the period 2004-2014. HSBC’s loans to fossil increased in the lead up to the global economic crisis, dropping to the lowest levels in 2009 before increasing rapidly until 2014. Loans to the selected companies attributable to renewable energy suffered during the global economic crisis, however, gradually increased between 2009 and 2013, before declining again in 2014.

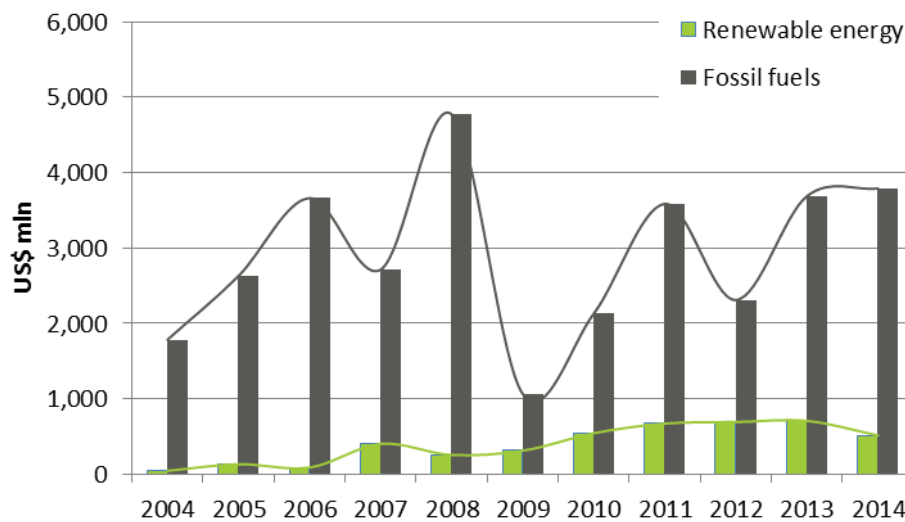
⁷⁴ HSBC (2010, May), *The UN Principles for Responsible Investment*.

⁷⁵ HSBC (2008, October), *HSBC and Climate Change*.

⁷⁶ HSBC (2014, March), *Introduction to HSBC’s Sustainability Risk Policies*.

⁷⁷ HSBC (2015, June), *Strategic Report 2014*.

Figure 45 HSBC loans to the selected companies (2004-2014)

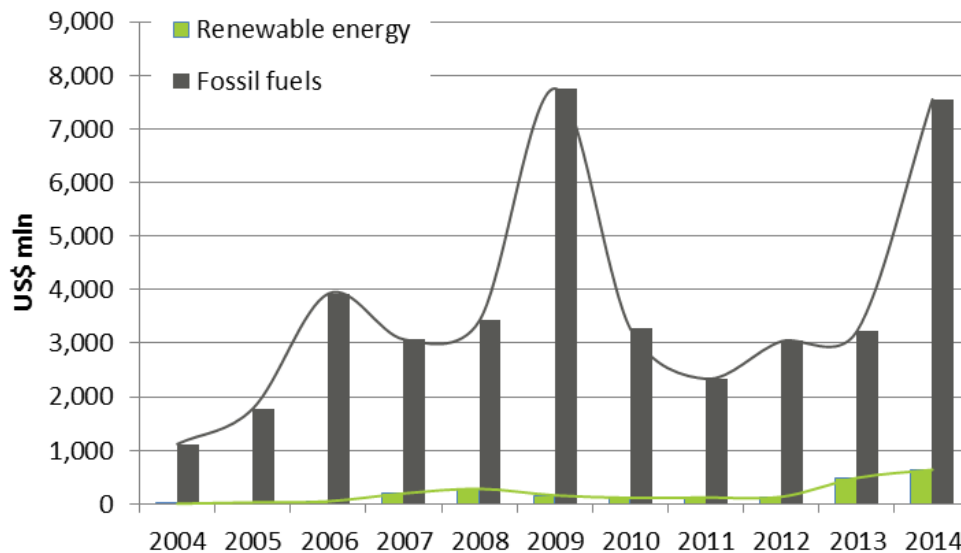


- **Underwriting**

Underwriting to renewable energy increased by 144%, while underwriting to fossil fuels increased by 35%. Figure 46 shows the underwriting services provided by HSBC to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Similar to other financial institutions in this study, HSBC's underwriting services to the selected companies attributable to fossil fuels increased rapidly in 2009. They declined again, however, in 2010. HSBC's underwriting services to the selected companies attributable to fossil fuels exceed US\$ 7 billion again by 2014.

HSBC's underwriting services to renewable energy did not reach US\$ 1 billion throughout the period of study. Underwriting attributable to renewable energy increased gradually to minimal levels in 2008, after which they declined again until 2012. Since 2012 there seems to have been a gradual increase in underwriting services to renewable energy.

Figure 46 HSBC underwriting services to the selected companies (2004-2014)



- **Shareholdings**

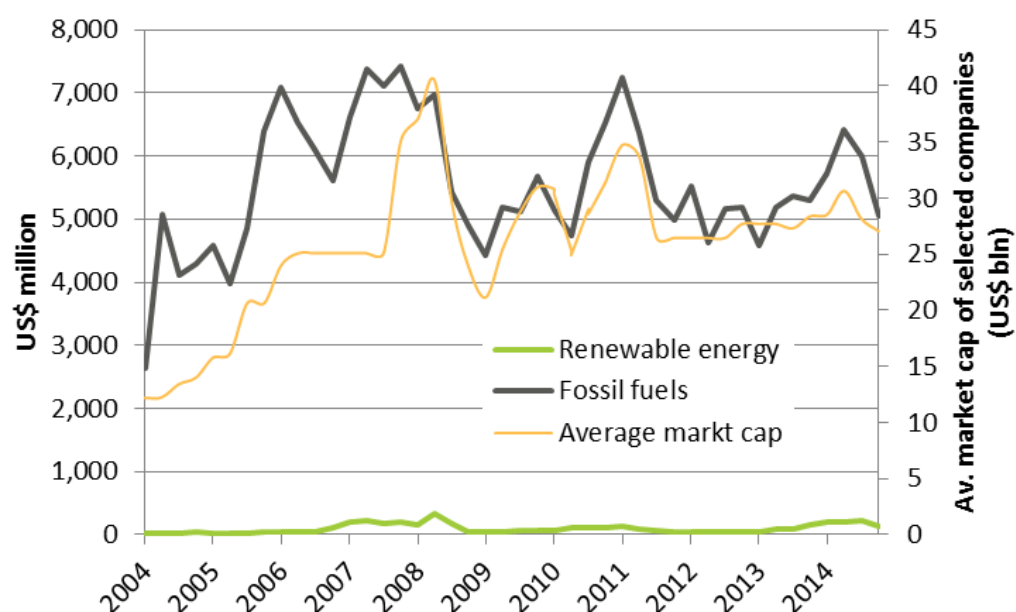
In 2006, HSBC Global Asset Management signed the UN-PRI commitment.⁷⁸ HSBC “runs a Climate Change Benchmark Index, used by institutional investors to make decisions about investing in companies likely to benefit from the responses to climate Change.”⁷⁹ The benchmark has existed since 2008. However, when looking at Figure 47 it appears that the index has not resulted in increased investments in companies in the scope of this study attributable to renewable energy. Levels of investment in shareholdings attributable to renewable energy have been low throughout the period of study. However, average annual investments in selected companies attributable to renewable energy increased in the second half of the period of study by 9%. Average annual investments in selected companies attributable to fossil fuels decreased by 1%.

Investments in selected companies attributable to fossil fuels have exceeded US\$ 4 billion per quarter since 2004, following the trends in average market capitalization quite closely. Investments in selected companies attributable to renewable energy have hardly exceeded US\$ 200 million.

⁷⁸ HSBC (2010, May), *The UN Principles for Responsible Investment*.

⁷⁹ HSBC (2014, March), *Sustainability Report 2013*, p. 12.

Figure 47 HSBC shareholdings in selected companies 2004-2014



4.3.13 ICBC (Industrial and Commercial Bank of China – China)

This section provides an analysis of the financing provided by the Industrial and Commercial Bank of China (ICBC) to the selected companies that can be attributed to renewable energy and fossil fuels.

This study did not identify any commitments by the ICBC regarding climate change mitigation. However, the Green Credit Guidelines published by the China Banking Regulatory Commission in 2012, state “Banking institutions shall promote green credit from a strategic height, increase the support to green, low-carbon and recycling economy, fend off environmental and social risks, and improve their own environmental and social performance, thus optimizing their credit structure, improving the quality of services, and facilitating the transformation of development mode.”⁸⁰

Table 25 shows that ICBC increased its total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects in the second half of the period of study by 29%. Loans and underwriting to the selected companies attributable to fossil fuels, however, increased by 86%. As a proportion of total loans and underwriting, loans and underwriting attributable to renewable energy decreased by 1%. Loans and underwriting to the selected companies attributable to fossil fuels as a proportion of total loans and underwriting decreased by 4%.

Table 25 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	29%	-1%

80 China Banking Regulatory Commission (2012, February), *Green Credit Guidelines*, online: <http://www.cbrc.gov.cn/EngdocView.do?docID=3CE646AB629B46B9B533B1D8D9FF8C4A>, viewed in September 2015.

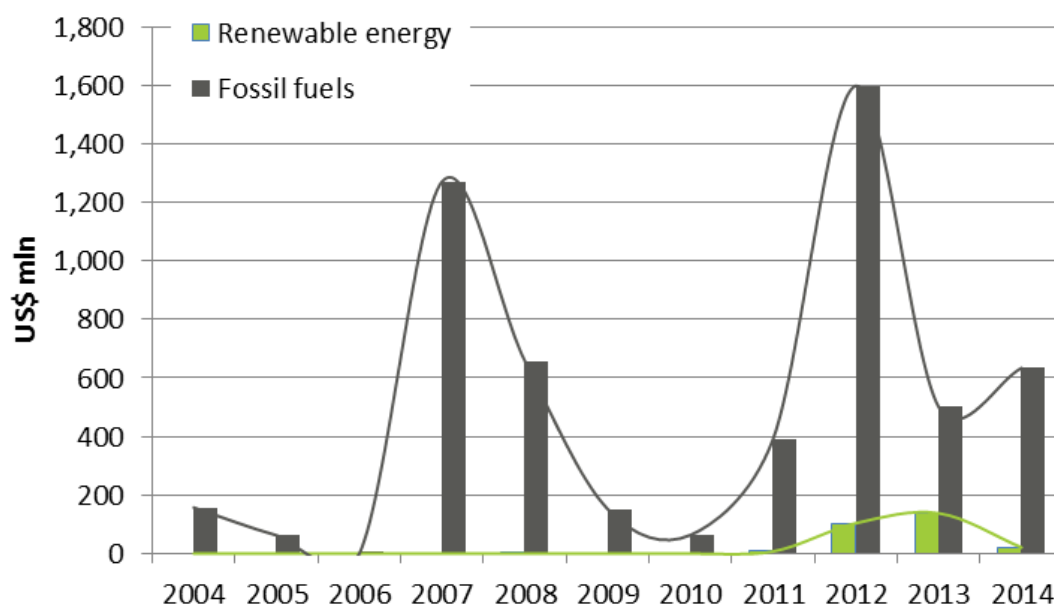
Energy source	Percent change	Proportion change
Fossil fuels	86%	-4%

- **Loans**

Loans to the selected companies attributable to renewable energy increased by 33,171%, from a very low starting point of less than US\$ 1 million to US\$ 270 million. Loans to the selected companies attributable to fossil fuels increased by 47%. Figure 48 provides an overview of the loans provided by ICBC to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. As with other top 25 global financial institutions, loans to the selected companies attributable to fossil fuels decreased during the period 2008-2010. However, they rapidly increased again in 2011 and 2012. In 2013 loans to the selected companies attributable to fossil fuels decreased, but show an upward trend again in 2014.

ICBC's started providing loans to the selected companies attributable to renewable energy in 2012. This was the same year that the Green Credit Guidelines, promoting financial sector support to the green / low-carbon economy, were published. However, the same year, ICBC also provided the highest value of Loans to the selected companies attributable to fossil fuels. ICBC's loans to the selected companies attributable to renewable energy increased in 2013, before tailing off in 2014 when loans to the selected companies attributable to fossil fuels again show an upward trend. This raises the question of what impact the Green Credit Guidelines have had on ICBC's loan portfolio.

Figure 48 ICBC loans to the selected companies (2004-2014)

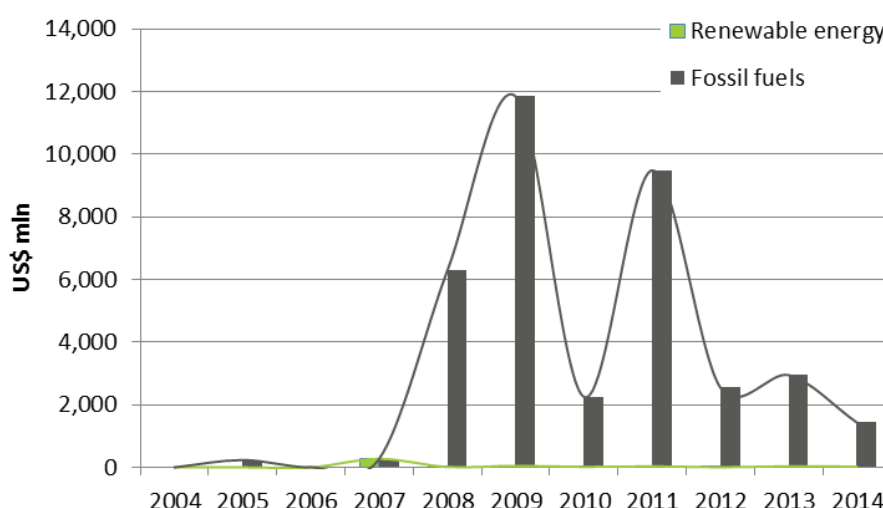


- **Underwriting**

Underwriting to renewable energy decreased by 59% in the period of study, while underwriting to fossil fuels increased by 93%. In line with the common theme among the top 25 financial institutions globally, underwriting services to the selected companies attributable to fossil fuels increased in 2008 and 2009. ICBC's underwriting services attributable to fossil fuels have fluctuated somewhat since 2010, but there is a general downward trend as seen in Figure 49.

Nevertheless, throughout the period of study, ICBC only provided underwriting services attributable to renewable energy in 2007. The Green Credit Guidelines of 2012 therefore do not seem to have had any impact on ICBC's support of renewable energy through its underwriting services.

Figure 49 ICBC underwriting services to the selected companies (2004-2014)

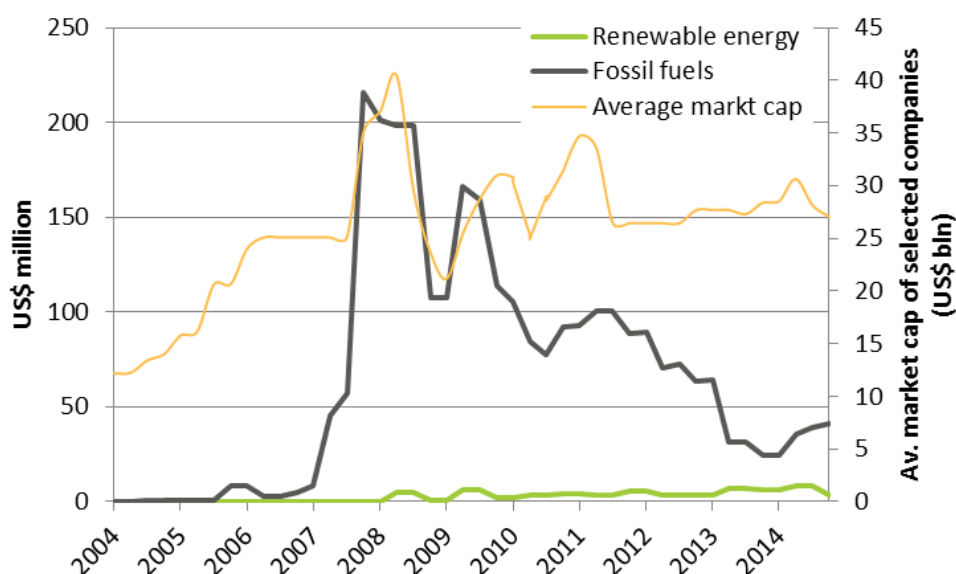


- **Shareholdings**

Average annual investments in selected companies attributable to renewable energy increased by 331% from US\$ 1 million to US\$ 4.5 million. As a proportion of total shareholdings in selected companies, shareholdings attributable to renewable energy increased by 4% and shareholdings attributable to fossil fuels increased by 3%, from US\$ 67 million to US\$ 70 million. Figure 50 shows ICBC's investments in the shareholdings of the selected companies that can be attributed to renewable energy and fossil fuels. There was a general lack of filing data for ICBC prior to 2007, explaining the surge in investments in selected companies attributable to fossil fuels in 2007. ICBC's investments in selected companies attributable to fossil fuels fluctuated following the trends of fluctuations in average market capitalization. However, since 2009 ICBC's investments in selected companies attributable to fossil fuels show a general downward trend. It is not clear whether this is a strategic decision by ICBC.

Investments in selected companies attributable to renewable energy have been negligible throughout the period of study, never more than US\$ 10 million, while investments in selected companies attributable to fossil fuels never fell below US\$ 25 million.

Figure 50 ICBC shareholdings in selected companies 2004-2014



4.3.14 ING Group (Netherlands)

This section provides description of the financing provided by the ING Group to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In September 2009, ING Group subscribed to the investor statement of the Corporate Climate Communique, similar to Barclays (see section 4.3.5) and the Bank of America (see section 4.3.2).⁸¹ It has endorsed every Corporate Climate Communique since 2009, most recently the 2014 Trillion Tonne Communique.⁸²

Table 26 shows that ING Group increased its loans and underwriting services attributable to renewable energy by 12% from the first half the period of study to the second. This minor increase stands in stark contrast to its 67% increase in loans and underwriting to the selected companies attributable to fossil fuels. While ING has endorsed every Corporate Climate Communique since 2009 it has also increased its financing to fossil fuels precisely in the period after this endorsement. As a proportion of its total loans and underwriting, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects decreased by 3% while loans and underwriting to the selected companies attributable to fossil fuels increased by 4%.

Table 26 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	12%	-3%
Fossil fuels	67%	4%

81 Copenhagen Communique (2009), *Signatories to the Copenhagen Communique – 2009*, online: <http://www.climatecommuniques.com/About/Copenhagen.aspx>, viewed in August 2015.

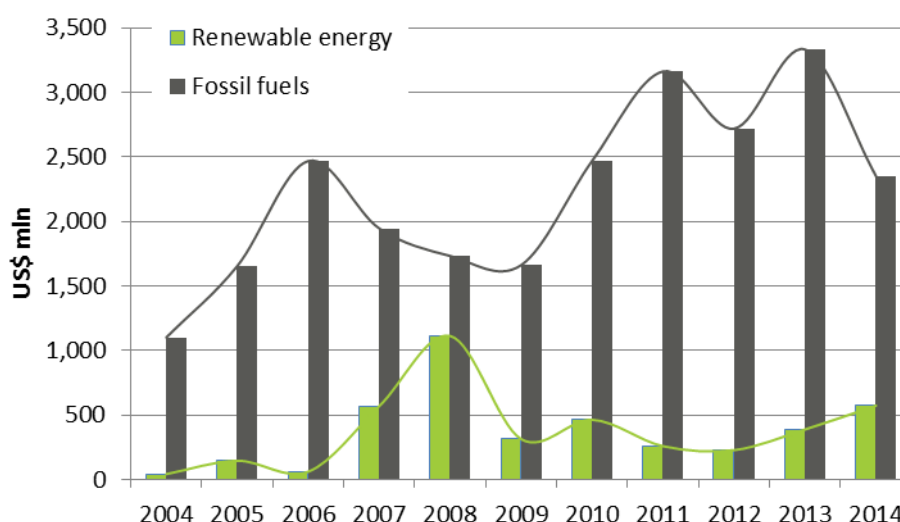
82 ING Group (n.d.), “Cap carbon at 1 trillion tonnes”, online: <http://www.ing.com/ING-in-Society/Sustainability/Sustainability-news/Snws-1/Cap-carbon-at-1-trillion-tonne.s.htm>, viewed in September 2015.

- **Loans**

ING's loans to the selected companies attributable to fossil fuels increased by 53% from the first half of the period of study to the second. Loans to the selected companies attributable to renewable energy actually decreased by 1%.

Figure 51 provides a detailed overview of ING Group's loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Loans to the selected companies attributable to fossil fuels declined slightly during the global economic recession, but increased rapidly thereafter. Loans to the selected companies attributable to renewable energy increased in the years preceding the economic crisis, declining at the height of the crisis. Loans to the selected companies attributable to renewable energy fluctuated between 2009 and 2014, showing a gradual upward trend from 2012 to 2014.

Figure 51 ING Group loans to the selected companies (2004-2014)



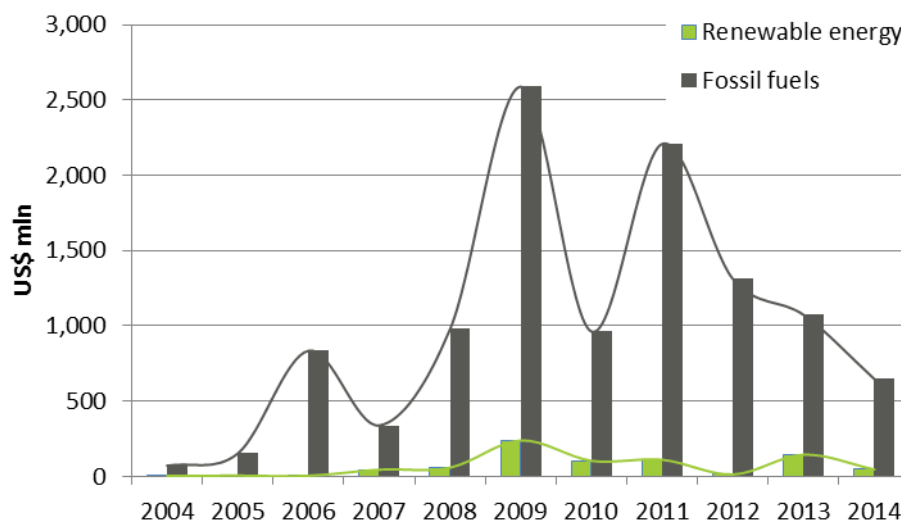
- **Underwriting**

In the second half of the period of study, ING's underwriting services to renewable energy increased by 126%. This achievement is somewhat undermined by the fact that its underwriting services to the selected companies attributable to fossil fuels increased by 104%, and the overall increase in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects only increased by 12%.

Figure 52 provides an overview of the annual changes in underwriting services attributable to renewable energy and fossil fuels. Throughout the period of study underwriting services to renewable energy have been minimal, never exceeding US\$ 250 million. Underwriting services to the selected companies attributable to fossil fuels increased to the highest levels in 2009, showing a gradual fluctuating decline thereafter, though not reaching below US\$ 500 million.

Is ING Group finally decreasing its support for fossil fuels after endorsing every Corporate Climate Communique since 2009, and most recently the 2014 Trillion Tonne Communique?⁸³ If so, why is it not making more of an effort to increase its support of renewable energy?

Figure 52 ING Group underwriting services to the selected companies (2004-2014)

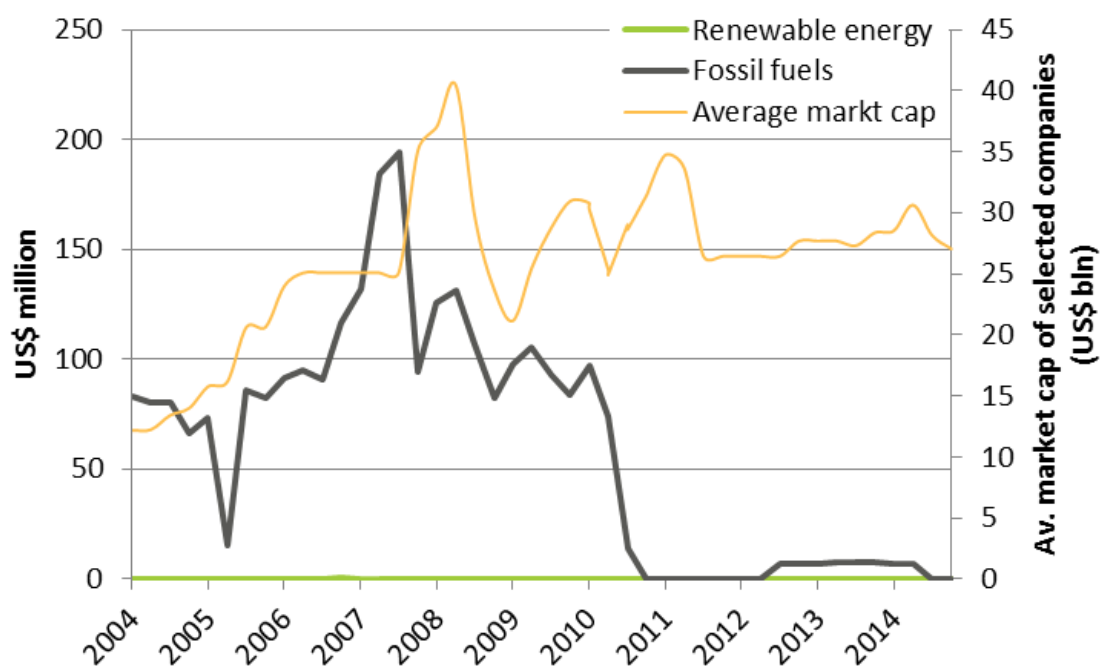


- **Shareholdings**

Figure 53 shows a sharp decline in investments in selected companies attributable to fossil fuels in 2010. This research did not find any investments of ING Group in companies attributable to renewable energy.

⁸³ ING Group (n.d.), "Cap carbon at 1 trillion tonnes", online: <http://www.ing.com/ING-in-Society/Sustainability/Sustainability-news/Snws-1/Cap-carbon-at-1-trillion-tonne-s.htm>, viewed in September 2015.

Figure 53 ING Group shareholdings in selected companies 2004-2014



4.3.15 JPMorgan Chase (United States)

This section provides an analysis of the financing provided by JPMorgan Chase to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In 2008 JPMorgan Chase adopted the Carbon Principles.⁸⁴

Table 27 shows JPMorgan Chase provided 80% more loans and underwriting services to renewable energy in the second half of the period of study, while it provided 5% more loans and underwriting services to the selected companies attributable to fossil fuels. As a proportion of its total loans and underwriting, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects increased by 2% while financing to fossil fuels increased by 4%.

Table 27 Percentage Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	80%	2%
Fossil fuels	5%	4%

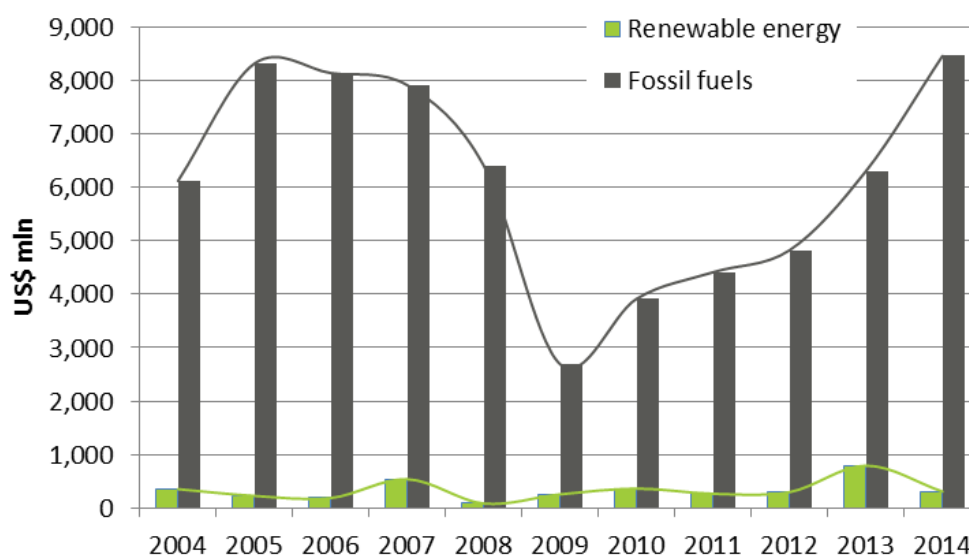
84 JPMorgan Chase (n.d.). "Environmental Sustainability & JPMorgan Chase & Co: Memberships and Commitments", online: http://www.jpmorganchase.com/corporate/Corporate-Responsibility/principles_guiding_our_business.htm, viewed in August 2015.

- **Loans**

JPMorgan Chase's loans to the selected companies attributable to renewable energy increased by 41% from the first half of the period of study to the second. Loans to the selected companies attributable to fossil fuels actually decreased by 23%.

The Carbon Principles do not rule out financing fossil fuels completely. Figure 54 shows that there is cause for concern for JPMorgan Chase's provision of Loans to the selected companies attributable to fossil fuels. These have been increasing since 2009, reaching their highest levels in the period of study in 2014. At the same time, loans to the selected companies attributable to renewable energy have been decreasing since 2013.

Figure 54 JPMorgan Chase loans to the selected companies (2004-2014)

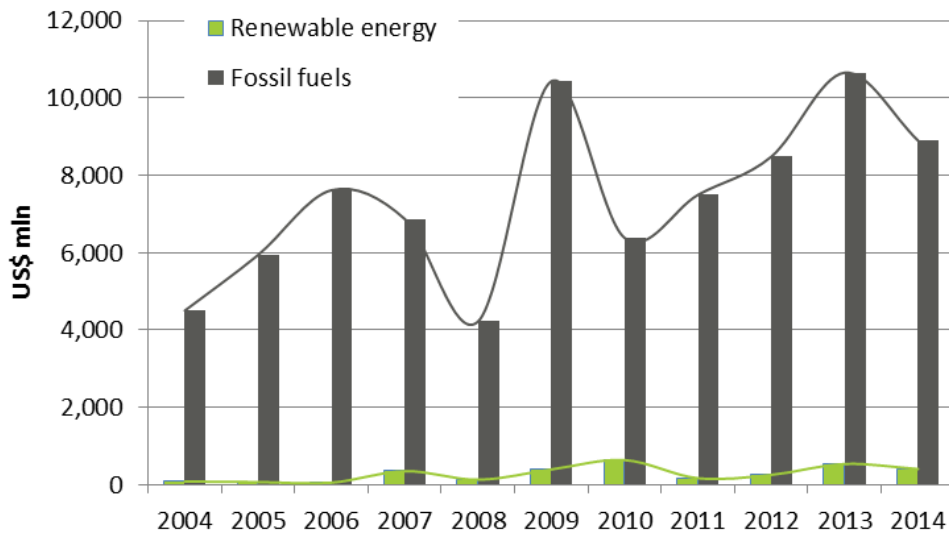


- **Underwriting**

JPMorgan Chase provided 146% more underwriting services to the selected companies attributable to renewable energy in the second half of the period of study than in the first. Underwriting services to the selected companies attributable to fossil fuels still increased by 37%.

Looking more closely at Figure 55 shows that the absolute levels of underwriting to renewable energy are still insignificant. Underwriting attributable to fossil fuels has exceeded US\$ 6 since 2009.

Figure 55 JPMorgan Chase underwriting services to the selected companies (2004-2014)

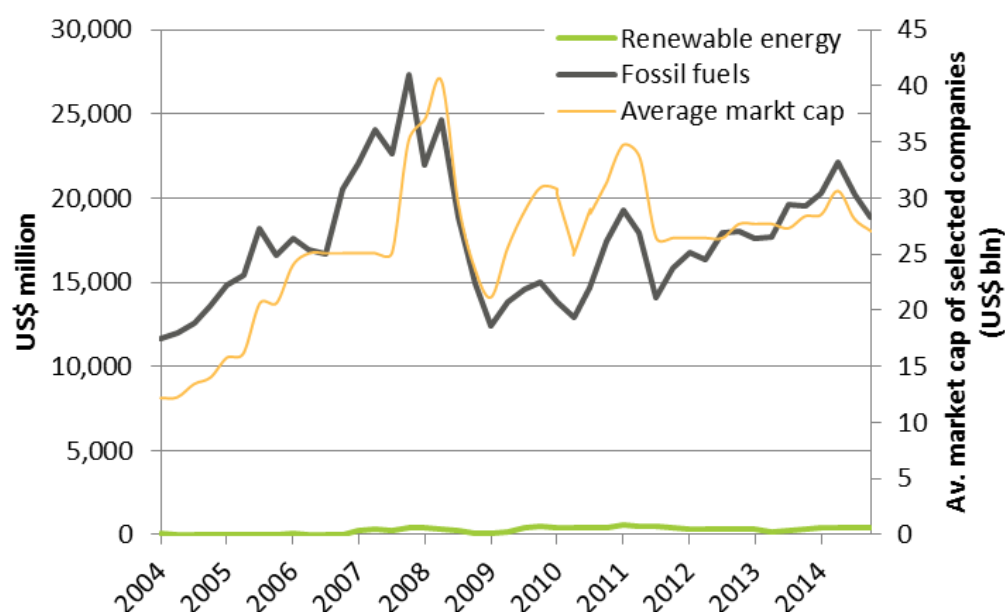


- **Shareholdings**

JPMorgan Chase's average annual investments in selected companies attributable to renewable energy increased by 134%, while its investments in selected companies attributable to fossil fuels decreased by 1%. As a proportion of total shareholdings, shareholdings attributable to renewable energy increased by 1%, while shareholdings attributable to fossil fuels increased by 3%.

JPMorgan Chase's investments in the shareholdings of the selected companies attributable to fossil fuels have generally followed the trends in average market capitalization of the selected companies. Figure 56 shows that JPMorgan Chase has only immaterial investments attributable to renewable energy.

Figure 56 JPMorgan Chase shareholdings in selected companies 2004-2014



4.3.16 Lloyds Banking Group (United Kingdom)

This section provides a description of the financing provided by Lloyds Banking Group to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In January 2010, Lloyds Banking Group committed to “managing and reducing [their] environmental impact, and have a strong track record”. They recognise that they “have a key role to play in addressing climate change; from financing renewable energy to helping our customers transition to a low carbon economy”.⁸⁵

In 2014, in their Environmental Policy, Lloyds Banking Group stated that they are “committed to reducing its carbon dioxide (CO₂) emissions and [are] also committed to managing [their] direct environmental impacts in a responsible manner”. As part of this commitment, the Group takes “account of environmental risks in [their] lending and investment businesses and actively seek to provide finance to enable the transition to a more environmentally sustainable economy”.⁸⁶

Table 28 shows that Lloyds Banking Group increased its loans and underwriting services attributable to renewable energy by 34% from the first half the period of study to the second. This increase is then undermined by Lloyds Banking Group’s 88% increase in loans and underwriting to the selected companies attributable to fossil fuels. As a proportion of total loans and underwriting, loans and underwriting to the selected companies attributable to renewable energy *decreased* by 4% while loans and underwriting to the selected companies attributable to fossil fuels *increased* by 4%.

⁸⁵ Lloyds Banking Group (2010, November). *Climate and Environment Report*, p. 9, online: http://www.lloydsbankinggroup.com/globalassets/documents/our-group/responsibility/reports/climate_environment_report_2010.pdf, viewed in August 2015.

⁸⁶ Lloyds Banking Group (2014, February). *Lloyds Banking Group Environmental Policy*, online: http://www.lloydsbankinggroup.com/globalassets/our-group/responsible-business/environment/environmental-statement-20131111_final-lbgcom.pdf, viewed in August 2015.

This leaves one to wonder where Lloyds is actively seeking to provide finance to enable the transition to a more environmentally sustainable economy, or if they have yet to start actively seeking these opportunities.

Table 28 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

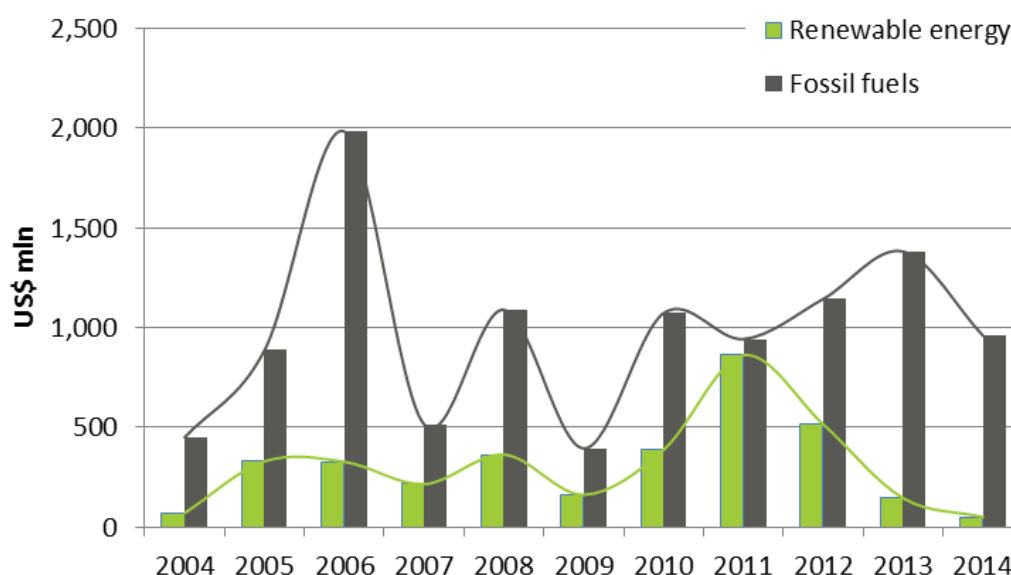
Energy source	Percent change	Proportion change
Renewable energy	34%	-4%
Fossil fuels	88%	4%

- **Loans**

Lloyds Banking Group increased its loans to the selected companies attributable to renewable energy by 47% in the second half of the period of study, while it increased its loans to the selected companies attributable to fossil fuels by 11%.

Figure 57 shows that Lloyds Banking Group is one of the few banks where the disparity between loans to the selected companies attributable to renewable energy and loans to the selected companies attributable to fossil fuels is not extremely large. In 2011, loans to the selected companies attributable to renewable energy almost equal Loans to the selected companies attributable to fossil fuels. Nevertheless, there is a significant decline in loans to the selected companies attributable to renewable energy after the peak in 2011. Loans to the selected companies attributable to renewable energy reach the lowest levels in the period of study in 2014.

Figure 57 Lloyds Banking Group loans to the selected companies (2004-2014)

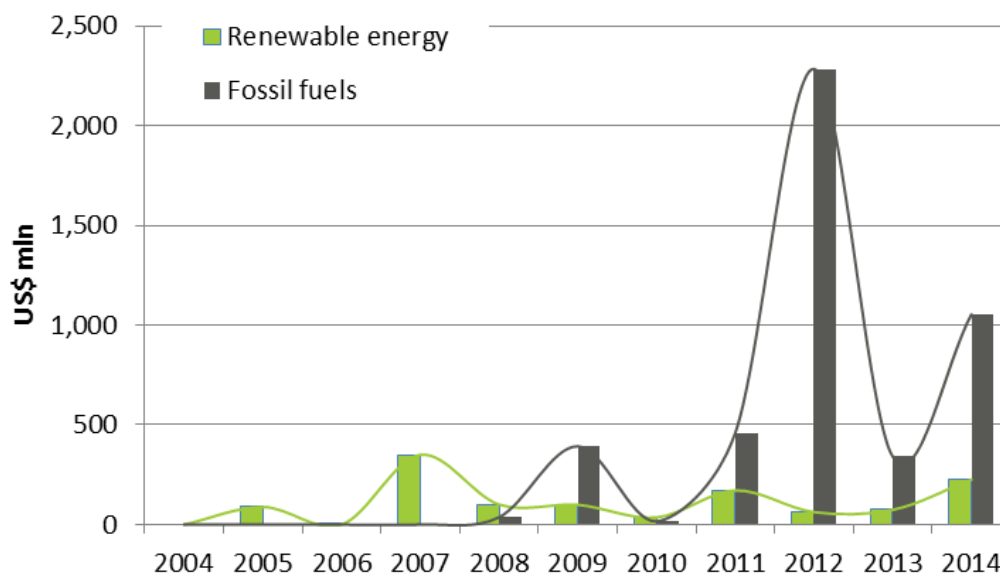


- **Underwriting**

Lloyds Banking Group increased its underwriting services attributable to renewable energy by 5%. However, it increased its underwriting services to the selected companies attributable to fossil fuels by 1,768%. This makes one wonder how meaningful Lloyds Banking Group's commitments really are.

Figure 58 shows that there were fluctuations in Lloyds Banking Group's underwriting services to renewable energy. These declined since a peak in 2007. There does, however, seem to be an upward trend in underwriting services to renewable energy in 2014.

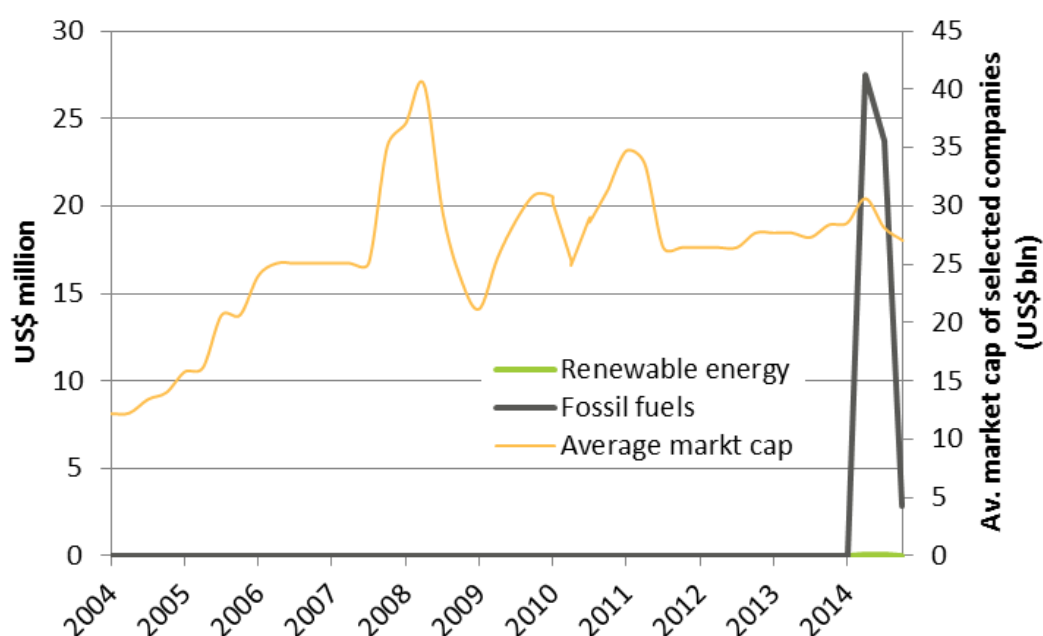
Figure 58 Lloyds Banking Group underwriting services to the selected companies (2004-2014)



- **Shareholdings**

This research did not identify significant investment by Lloyds Banking Group in the selected companies. The identified findings in 2014 were for investments by Lloyds Bank International in a number of fossil fuel and utility companies. Also very marginal positions in renewable energy were identified of around US\$ 100,000.

Figure 59 Lloyds Banking Group shareholdings in selected companies 2004-2014



4.3.17 Mitsubishi UFJ Financial (Japan)

This section analyses the financing provided by Mitsubishi UFJ to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Mitsubishi UFJ states that it is “actively promoting and working to encourage the widespread use of renewable energy for the realization of a sustainable environment and the sustainability of society itself.”⁸⁷

In 2014, Mitsubishi UFJ “was ranked No.2 in the global project finance lead arranger table for renewable energy. This was largely attributable to the initiatives we have undertaken in renewable energy (solar, hydropower, wind, and thermal) around the world. Drawing on our proven track record and know-how cultivated over years, we will continue to be a driving force behind the dissemination of renewable energy going forward”.⁸⁸

Table 29 shows that Mitsubishi UFJ increased its loans and underwriting services attributable to renewable energy by 345% from the first half the period of study to the second. This contrasts with an increase of 25% attributable to fossil fuels. As a proportion of total loans and underwriting, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects increased by 7% while loans and underwriting to the selected companies attributable to fossil fuels decreased by 1%.

Table 29 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
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87 Mitsubishi UFJ (n.d.), “Promotion and dissemination of renewable energy”, online: <http://www.mufig.jp/english/csr/juten/sustainability/saiseikanou/>, viewed in September 2015.

88 Mitsubishi UFJ (n.d.), “Promotion and dissemination of renewable energy”, online: <http://www.mufig.jp/english/csr/juten/sustainability/saiseikanou/>, viewed in September 2015.

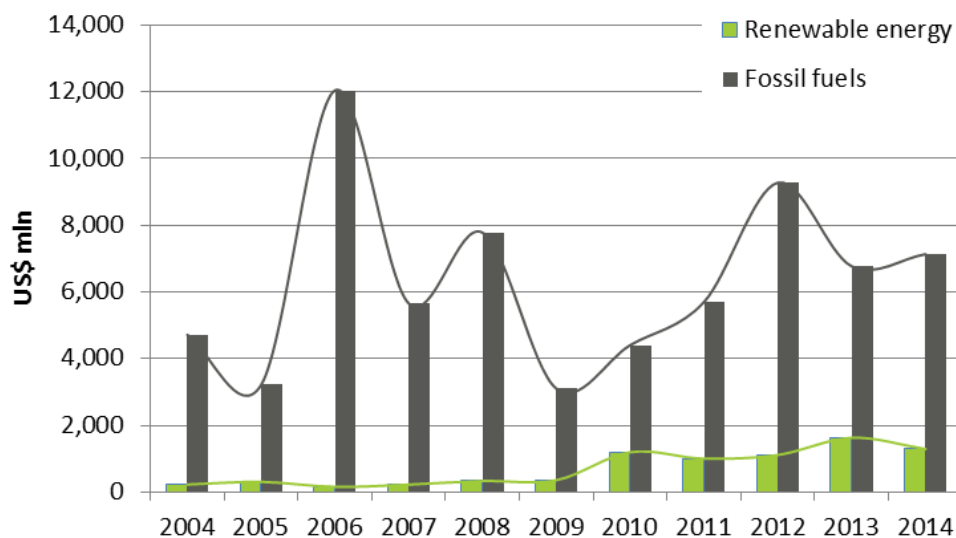
Energy source	Percent change	Proportion change
Renewable energy	345%	7%
Fossil fuels	25%	-1%

• Loans

Mitsubishi UFJ provided 346% more loans to the selected companies attributable to renewable energy in the second half of the period under study, compared to the first half. Loans to the selected companies attributable to fossil fuels decreased by 0.3%.

Figure 60 shows that while loans to the selected companies attributable to renewable energy fluctuated during the period of study, there is a general upward trend. Loans to the selected companies attributable to fossil fuels declined during the economic crisis, and gradually picked up again. However, Mitsubishi UFJ's loans to fossil did not reach the peak experienced in 2006.

Figure 60 Mitsubishi UFJ Financial loans to the selected companies (2004-2014)



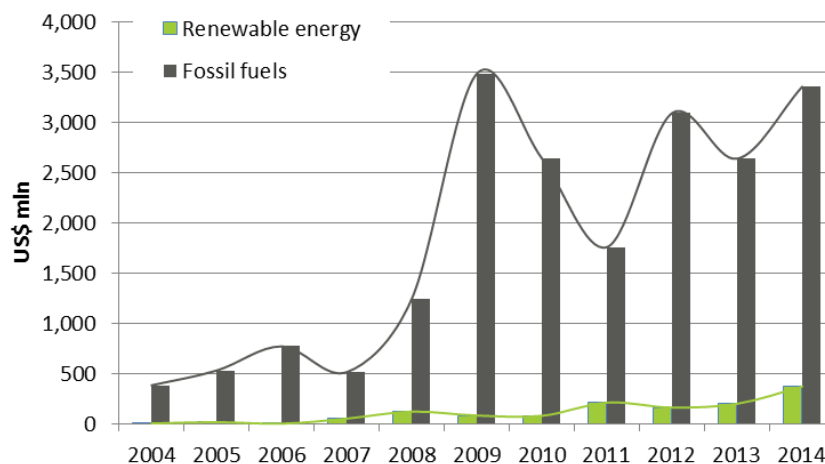
• Underwriting

Mitsubishi UFJ increased its provision of underwriting services to the selected companies attributable to fossil fuels by 193% in the second half of the period of study compared to the first. However, it increased its underwriting for renewable energy by 340%.

Figure 61 provides a more detailed overview of the changes in the Mitsubishi UFJ's underwriting of renewable energy and fossil fuels between 2004 and 2014. In line with the general identified trend, underwriting services for fossil fuels increased in 2009. These declined in the years that followed, but have gradually increased since 2011.

Underwriting services for renewable energy also fluctuated in the period under study. However, they show a general upward trend since 2012.

Figure 61 Mitsubishi UFJ Financial underwriting services to the selected companies (2004-2014)

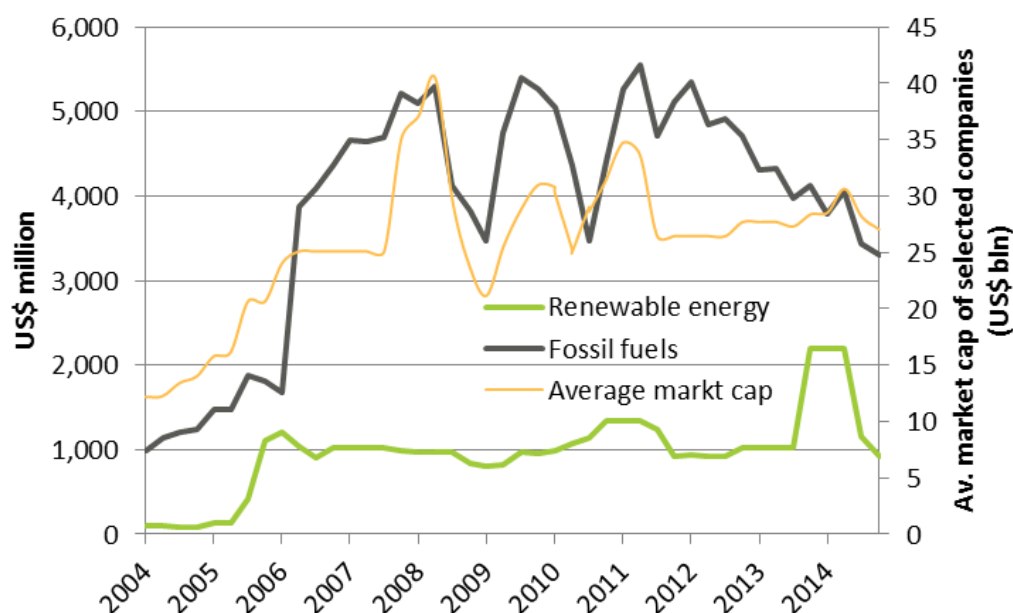


- **Shareholdings**

Average annual investments in selected companies attributable to renewable energy increased by 67% in the second half of the period of study. Average annual investments in selected companies attributable to fossil fuels, however, also increased, though by a lesser 30%. As a proportion of total average annual investments in selected companies, shareholdings attributable to renewable energy increased by 5%, the proportion attributable to renewable energy increased by 3%.

Figure 62 shows that Mitsubishi UFJ's investments in selected companies attributable to fossil fuels generally follow the trends in average market capitalization of the selected companies. Investments attributable to renewable energy increased between 2004 and the second quarter of 2005. They have since generally remained over US\$ 1 billion, peaking in the second quarter of 2013, before declining again in 2014.

Figure 62 Mitsubishi UFJ Financial shareholdings in selected companies 2004-2014



4.3.18 Mizuho Financial (Japan)

This section describes the financing provided by Mizuho Financial to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Mizuho Financial states that “[a]gainst the backdrop of the increasingly active efforts being made in Japan and overseas to protect the global environment, companies are proactively promoting environmental friendliness promotion efforts. Mizuho believes that part of the financial institution's social mission is to provide financial support for these efforts.”⁸⁹

In order to assist it in its efforts, Mizuho Financial has developed “Carbon Accounting: An evaluation of business activities involving CO₂ focused on the amount of greenhouse gas emissions (GHG) related to CO₂ produced or reduced by business activities. Mizuho Bank developed its own methodology, “Carbon Accounting,” to evaluate “Environmental Burdens” and “Environmental Preservation Effects” in power plant projects it financed via project finance. Our evaluation approach is described and the results published since First half of FY 2006.”⁹⁰

Table 30 shows that Mizuho Financial increased its loans and underwriting services attributable to renewable energy by 316% from the first half the period of study to the second. This contrasts with an increase of 75% attributable to fossil fuels. As a proportion of total loans and underwriting, loans and underwriting attributable to renewable energy increased by 4%, while the proportion attributable to fossil fuels decreased by 2%.

89 Mizuho Financial (n.d.), “Finance”, online: <http://www.mizuho-fg.co.jp/english/csr/environment/business/financing.html>, viewed in September 2015.

90 Mizuho Financial (n.d.), “Initiatives for carbon accounting”, online: <http://www.mizuho-fg.co.jp/english/csr/environment/activity/carbon.html>, viewed in September 2015.

Table 30 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

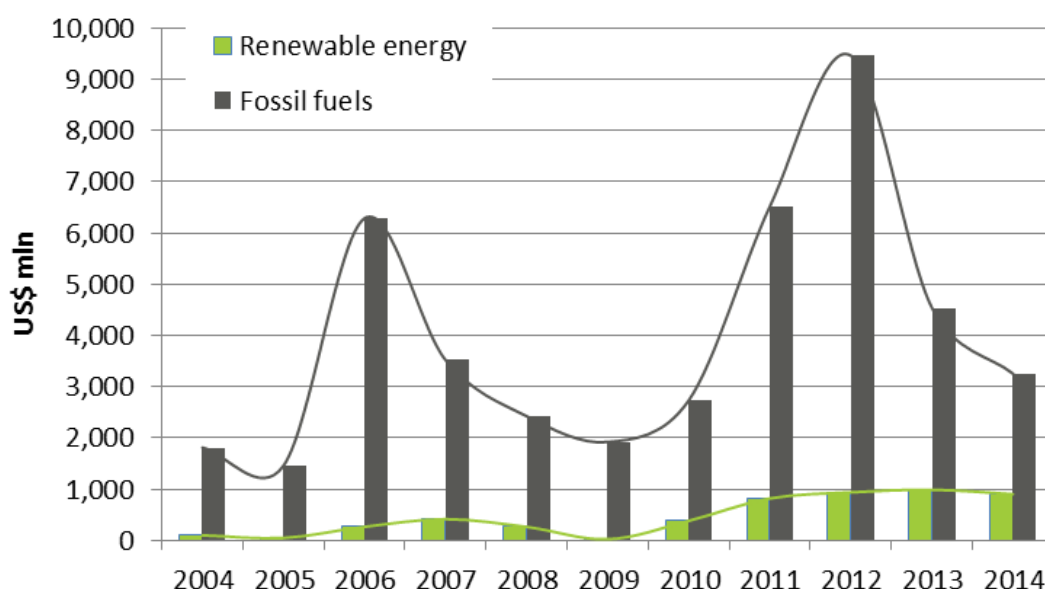
Energy source	Percent change	Proportion change
Renewable energy	316%	4%
Fossil fuels	75%	-2%

- Loans**

Mizuho Financial's loans to the selected companies attributable to renewable energy increased by 262% in the second half of the period of study, compared to the first. Loans to the selected companies attributable to fossil fuels increased by 67%

Figure 63 shows that loans to both fossil fuels and renewable energy declined during the economic crisis. Both quickly recovered, with loans to the selected companies attributable to fossil fuels reaching a peak of over US\$ 9 billion in 2012, before declining again. Loans to the selected companies attributable to renewable energy have been stable at approximately US\$ 1 billion since 2011.

Figure 63 Mizuho Financial loans to the selected companies (2004-2014)

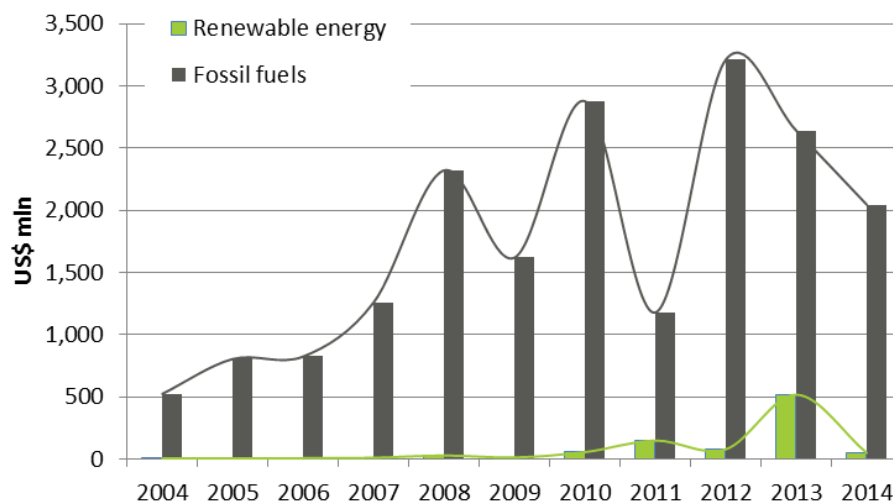


- Underwriting**

Underwriting services to the selected companies attributable to fossil fuels provided by Mizuho Financial increased by 95% in the second half of the period of study. However, underwriting services to renewable energy increased by 1,330%.

Figure 64 shows that there was a general upward trend in underwriting for fossil fuels until 2012. Underwriting services to the selected companies attributable to fossil fuels has declined since then. There were only minimal levels of underwriting to renewable energy before 2009. These have gradually increased since then, peaking at over US\$ 500 million in 2013. 2014 has shown a sharp decline though.

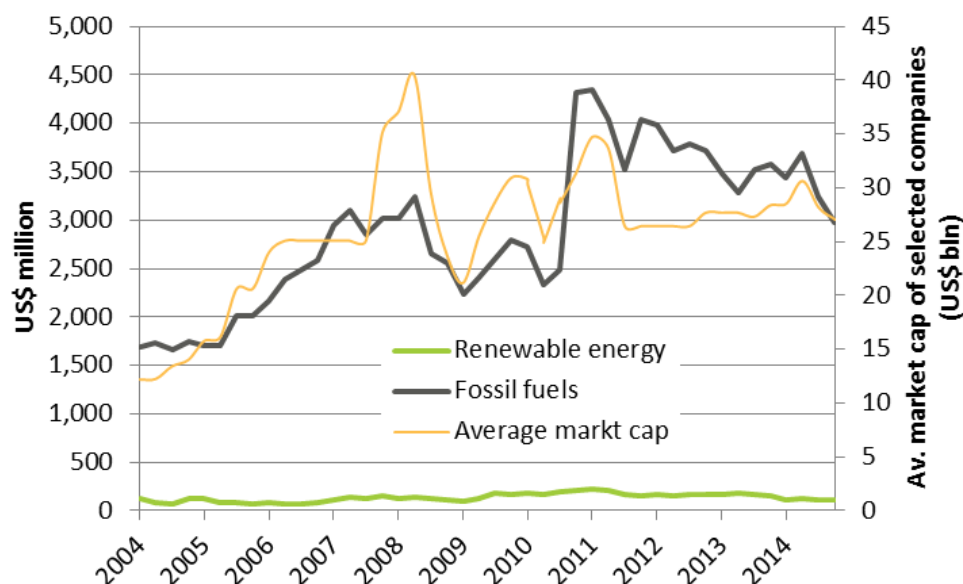
Figure 64 Mizuho Financial underwriting services to the selected companies (2004-2014)



- Shareholdings**

Average annual investments in selected companies attributable to renewable energy increased by 51% in the second half of the period of study. Average annual investments in selected companies attributable to fossil fuels increased by 43%. As a proportion of total average annual investments in selected companies, investments in selected companies attributable to renewable energy increased by 1%, while investments in selected companies attributable to fossil fuels increased by 12%. Mizuho Financial's investments in selected companies attributable to fossil fuels have followed the general trend in fluctuations in average market capitalization of the selected companies, as shown in Figure 65. Investments in selected companies in renewable energy have remained constantly low, with little sign of growth or decline throughout the period of study.

Figure 65 Mizuho Financial shareholdings in selected companies 2004-2014



4.3.19 Royal Bank of Scotland (United Kingdom)

This section analyses the financing provided by Royal Bank of Scotland to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In 2007, Royal Bank of Scotland committed to the Carbon Disclosure Project.⁹¹ In 2009, Royal Bank of Scotland subscribed to the investor statement of the Corporate Climate Communique.⁹² In October 2013, Royal Bank Scotland stated that “We are committed to supporting the renewable energy and energy efficiency industries through a variety of financing and advisory services.”⁹³

Table 31 shows that Royal Bank of Scotland decreased its loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects by 51% in the second half of the period of study. On a positive note, it also decreased its loans and underwriting services to the selected companies attributable to fossil fuels by 46%. However, the decline in financing for renewable energy does leave one wondering how Royal Bank of Scotland is committed to supporting renewable energy. As a proportion of total loans and underwriting to the selected companies, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects did not change, while the proportion of loans and underwriting to the selected companies attributable to fossil fuels increased by 3%.

Table 31 Percentage Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	-51%	0%
Fossil fuels	-46%	3%

- **Loans**

Royal Bank of Scotland provided 58% less loans to the selected companies attributable to renewable energy in the second half of the period of study than the first. Loans to the selected companies attributable to fossil fuels decreased by 59%.

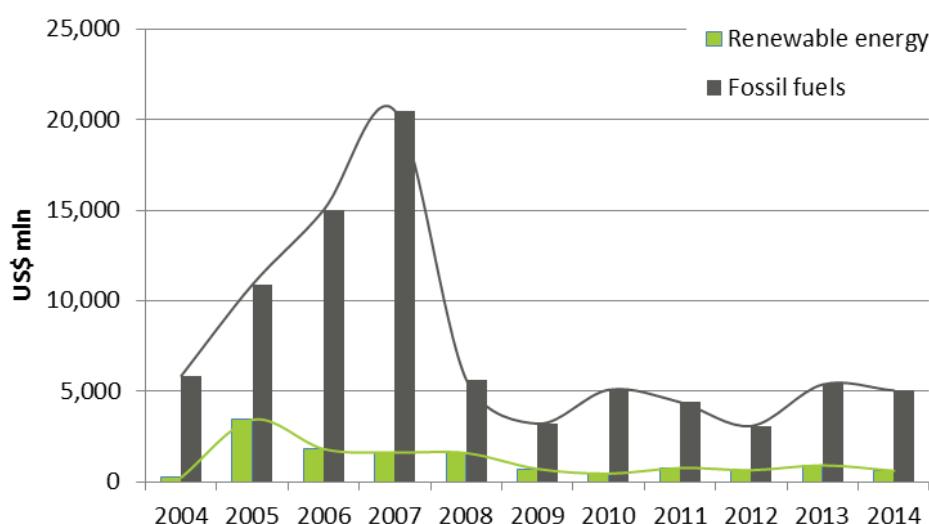
Figure 66 shows that the global economic crisis had a marked effect on the Royal Bank of Scotland's loan portfolio. Loans to the selected companies attributable to fossil fuels decreased in 2008 from their peak of US\$ 20 billion in 2007. Loans to the selected companies attributable to renewable energy already declined since 2005.

91 CDP (n.d.). “CDP signatories and member”, online: <https://www.cdp.net/en-US/Programmes/Pages/Members-List.aspx>, viewed in August 2015.

92 Copenhagen Communique (2009). *Signatories to the Copenhagen Communique – 2009*, online: <http://www.climatecommuniques.com/About/Copenhagen.aspx>, viewed in August 2015.

93 Royal Bank of Scotland (2013, October). *Our financing of the energy sector in 2012*, online: <http://www.rbs.com/content/dam/rbs/Documents/Sustainability/2012-energy-financing-report.pdf>, viewed in August 2015.

Figure 66 Royal Bank of Scotland loans to the selected companies (2004-2014)

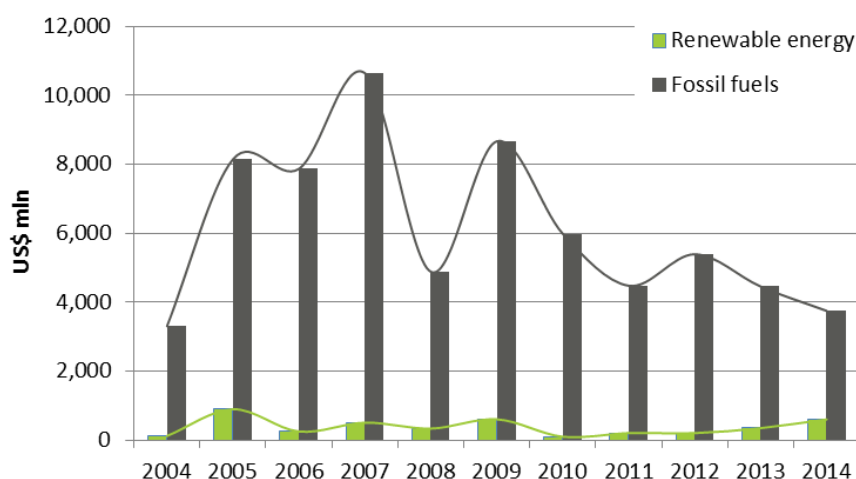


- **Underwriting**

Underwriting services provided by Royal Bank of Scotland attributable to renewable energy decreased in 26% in the second half of the period of study. Underwriting services to the selected companies attributable to fossil fuels decreased by a similar amount, 27%.

Figure 67 provides an overview in the annual changes of underwriting services provided by the Royal Bank of Scotland to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. After a sharp decline in underwriting services to the selected companies attributable to fossil fuels in 2008, these picked up again in 2009. There has been a general downward trend in underwriting to fossil fuel companies since 2009. Underwriting services attributable to renewable energy also fluctuated. In 2009 there was a high point in underwriting services to renewable energy followed by a sharp decline in 2010. Underwriting services attributable to renewable energy have generally increased since 2010, though only gradually.

Figure 67 Royal Bank of Scotland underwriting services to the selected companies (2004-2014)

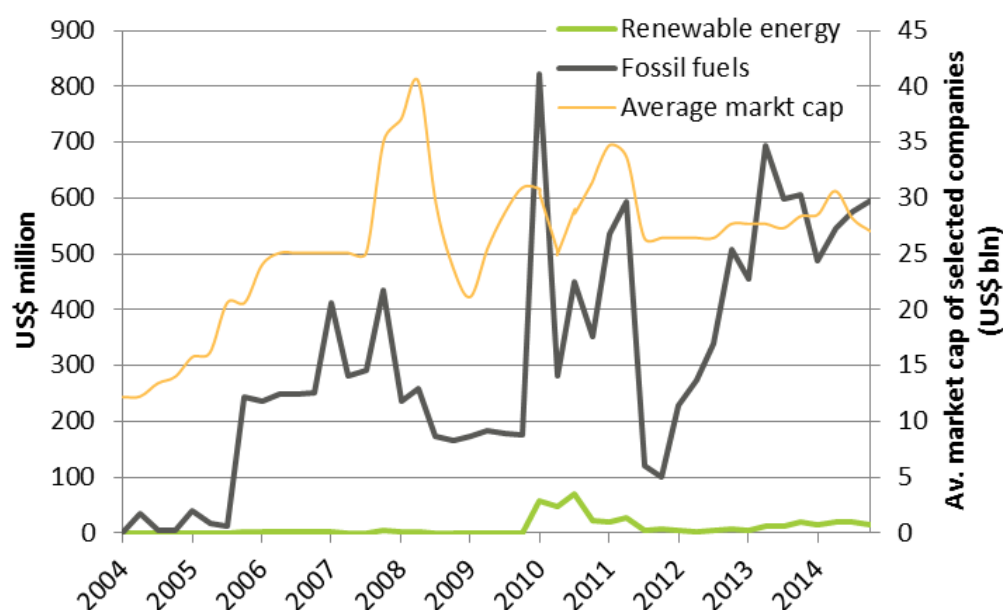


- **Shareholdings**

Average annual investments in selected companies attributable to renewable energy increased by 1,967% in the second half of the period of study from US\$ 1 million to US\$ 25 million. Average annual investments attributable to fossil fuels, increased by 157%. As a proportion of total shareholdings in selected companies, shareholdings attributable to renewable energy increased by 4%. The proportion of loans and underwriting attributable to fossil fuels decreased by 2%.

Royal Bank of Scotland's investments in selected companies attributable to renewable energy have been consistently very low. This contrasts with the high levels of investments in selected companies attributable to fossil fuels. Investments in selected companies attributable to fossil fuels have fluctuated throughout the period of study with significant decreases in 2008 and 2011. However, investments in selected companies attributable to fossil fuels generally show an upward trend while investments in selected companies attributable to renewable energy remain negligible.

Figure 68 Royal Bank of Scotland shareholdings in selected companies 2004-2014



4.3.20 Santander (Spain)

This section provides a description of the financing provided by Santander to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Santander has a climate change policy. However, not clear commitments to mitigate the impact of Santander's financing on climate change were made. As with HSBC (see section 4.3.12), Santander does state that it seeks to explore the commercial opportunities related to renewable energy and climate change mitigation.⁹⁴

94 Santander Group (2015, February), *Climate Policy*, p. 2.

Table 32 shows that Santander increased its loans and underwriting services attributable to renewable energy by 16% from the first half the period of study to the second. This increase is then undermined by its 34% increase in loans and underwriting to the selected companies attributable to fossil fuels. As a proportion of total loans and underwriting, loans and underwriting attributable to renewable energy decreased by 1%, while fossil fuels increased its proportion by 4%.

Table 32 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

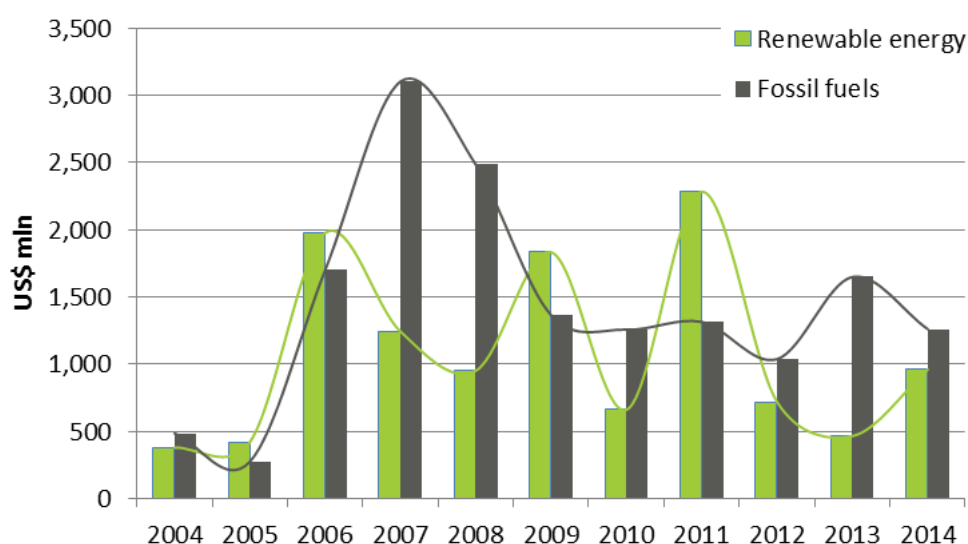
Energy source	Percent change	Proportion change
Renewable energy	16%	-1%
Fossil fuels	34%	4%

• Loans

In the second half of the period of study, Santander's loans to the selected companies attributable to renewable energy increased by a mere 2%. However, this is complemented by a decrease in lending to fossil fuels by 17%.

Figure 69 provides a more detailed overview of the changes in Santander's lending to renewable energy and fossil fuels. The most positive observation is that Santander's lending to renewable energy often outstrips its lending to fossil fuels. Both have fluctuated over the period 2004-2014, with a concerning dip in loans to the selected companies attributable to renewable energy since 2011.

Figure 69 Santander loans to the selected companies (2004-2014)

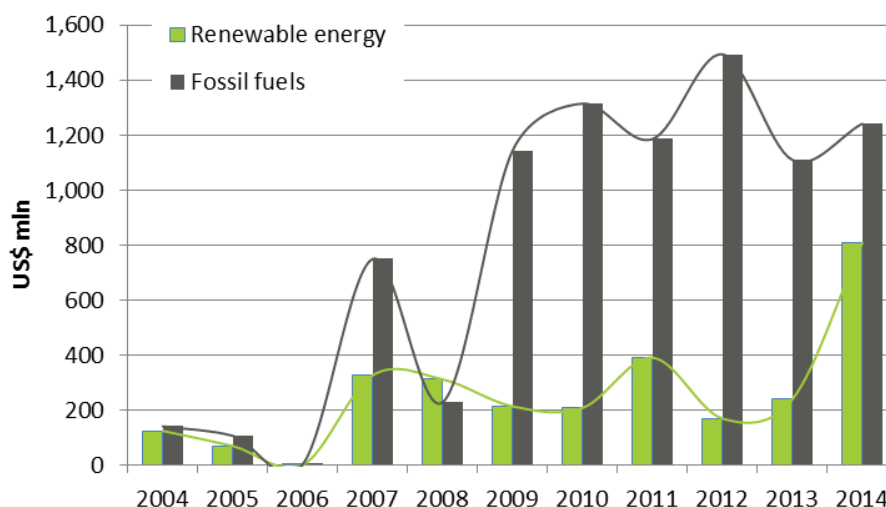


• Underwriting

Santander increased its underwriting to renewable energy by 105% in the second half of the period of study. However, this is undermined by an increase in underwriting to attributable to fossil fuels by 285%.

Figure 70 shows in more detail the changes in underwriting attributable to renewable energy and fossil fuels between 2004 and 2014. There is a sharp increase in underwriting to fossil fuels in 2009. Underwriting for renewable energy has fluctuated since 2007, but has shown a notable upward trend since 2013.

Figure 70 Santander underwriting services to the selected companies (2004-2014)



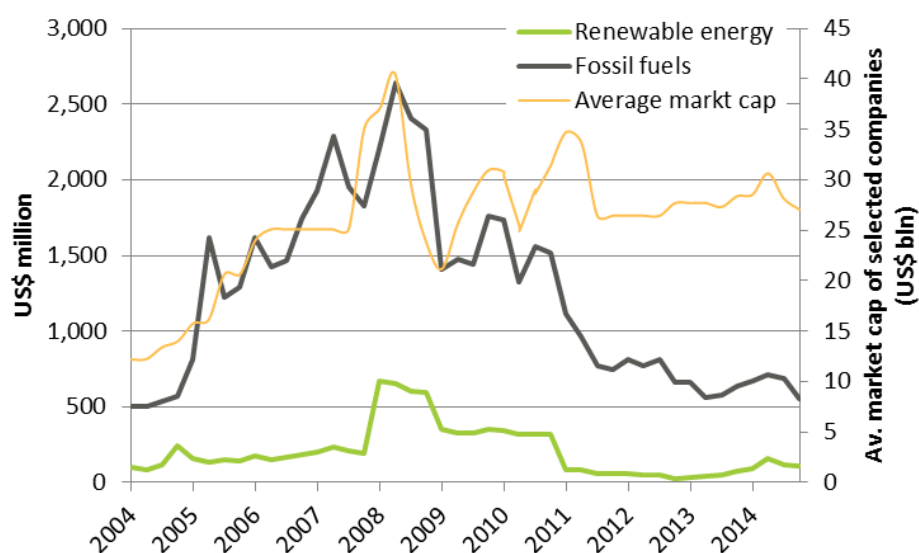
- **Shareholdings**

Average annual investments in selected companies attributable to renewable energy decreased by 43% in the second half of the period of study. Shareholdings attributable to fossil fuels, in the same period, decreased by 35%. As a proportion of total shareholdings in selected companies, Santander's proportion attributable to renewable energy increased by 3%, while the proportion attributable to fossil fuels increased by 21%.

Investments in shareholdings of the selected companies attributable to fossil fuels followed the trend of average market capitalization of the selected companies until the second quarter of 2010. Since then, there has been a decline in investments in selected companies attributable to fossil fuels.

Investments attributable to fossil fuels gradually grew until the third quarter of 2007, after which there was a rapid increase. By 2009, Santander's investments in the shareholdings of the selected companies attributable to renewable started to decline.

Figure 71 Santander shareholdings in selected companies 2004-2014



4.3.21 Société Générale (France)

This section provides an analysis of the financing provided by Société Générale to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Société Générale has signed the Climate Principles and is a participant in the Carbon Disclosure Project.

Table 33 shows that total loans and underwriting attributable to renewable energy by Société Générale increased by 143%. Total loans and underwriting to the selected companies attributable to fossil fuels decreased by 1% in the second half of the period of study. Of the total loans and underwriting to the selected companies, the proportion attributable to renewable energy increased by 5%, while the proportion attributable to fossil fuels decreased by 2%.

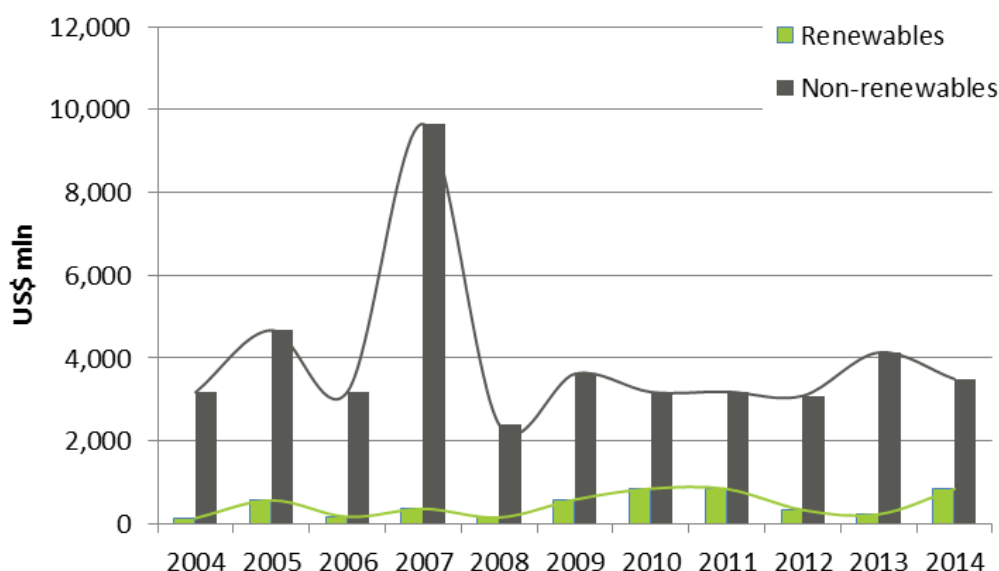
Table 33 Percentage Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	143%	5%
Fossil fuels	-1%	-2%

• Loans

Loans to the selected companies attributable to renewable energy increased by 101% in the second half of the period of study. Loans to the selected companies attributable to fossil fuels, on the other hand, decreased by 24%. Figure 72 shows that throughout the period of study loans to the selected companies attributable to renewable energy never exceed US\$ 1 billion. Loans to the selected companies attributable to fossil fuels hardly ever fell below US\$ 3 billion annually.

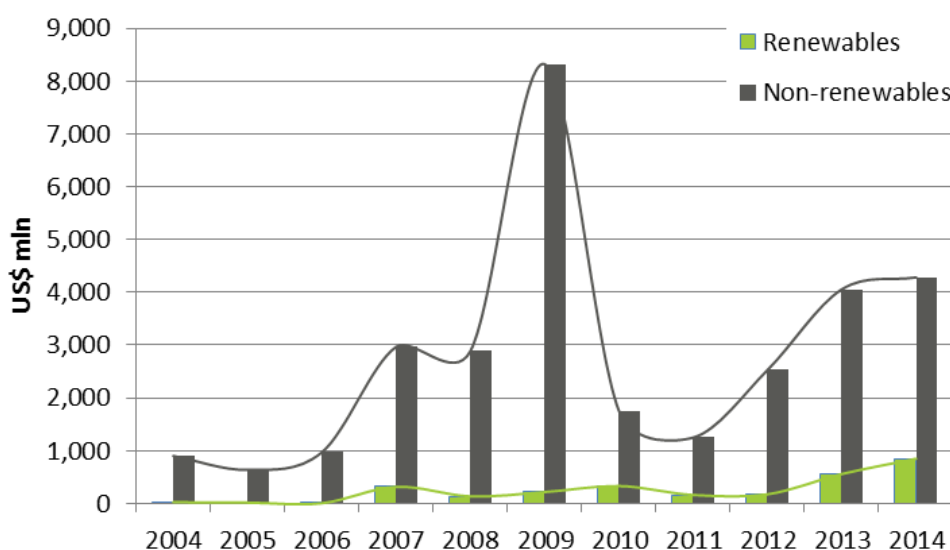
Figure 72 Société Générale loans to the selected companies (2004-2014)



- **Underwriting**

Underwriting to renewable energy increased by 259%, while underwriting to fossil fuels by 44%. Figure 73 shows that underwriting to fossil fuels peaked in 2009 over US\$ 8 billion. Underwriting to fossil fuels has generally been over US\$ 2 billion throughout the period of study. Underwriting to renewable energy generally fluctuated between US\$ 150 million and US\$ 350 million. There is, however, a general upward trend since 2012, peaking at US\$ 850 million in 2014.

Figure 73 Société Générale underwriting services to the selected companies (2004-2014)

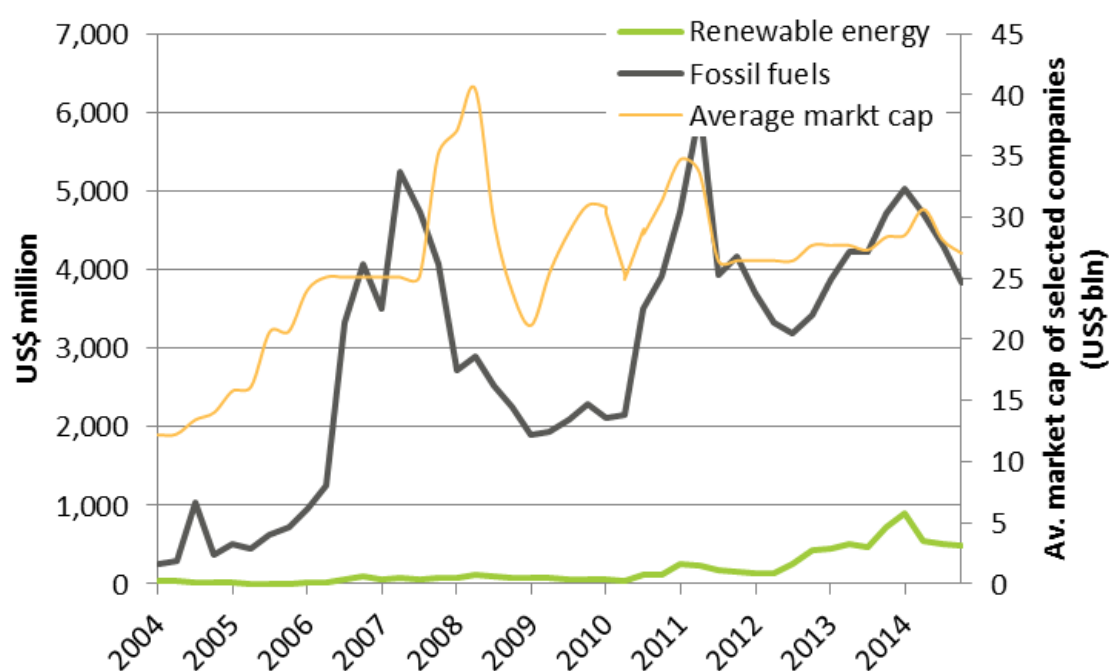


- **Shareholdings**

Average annual shareholdings attributable to renewable energy increased by 464% in the second half of the period of study to US\$ 295 million. Average annual investment's in fossil fuels, however, also increased by 81%. As a proportion of total shareholdings, shareholdings attributable to renewable energy increased by 4%, while the proportion attributable to fossil fuels decreased by 3%.

Average annual investments attributable to renewable energy have generally not exceeded US\$ 500 million. However in the first quarter of 2014, they almost reached US\$ 1 billion before falling again. Throughout the most part of the period of study shareholdings attributable to fossil fuels have exceeded US\$ 2billion.

Figure 74 Société Générale shareholdings in selected companies 2004-2014



4.3.22 Sumitomo Mitsui Financial (Japan)

This section provides a description of the financing provided by Sumitomo Mitsui Financial to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Sumitomo Mitsui Financial states that it is actively supporting renewable energy projects in Japan and all over the world.⁹⁵ Table 34 shows that there is some credence to this claim. In the second half of the period of study, Sumitomo Mitsui Financial increased its loans and underwriting to the selected companies attributable to renewable energy by 513%. In the same period, loans and underwriting to the selected companies attributable to fossil fuels increased by 136%. In terms of proportion of total loans and underwriting, loans and underwriting attributable to renewable energy increased by 5%, while the proportion attributable to fossil fuels decreased by 2%.

95 Sumitomo Mitsui Financial (n.d.), "Eco-business", online: <http://www.smbc.co.jp/aboutus/responsibility/environment/buisiness/index.html>, viewed in September.

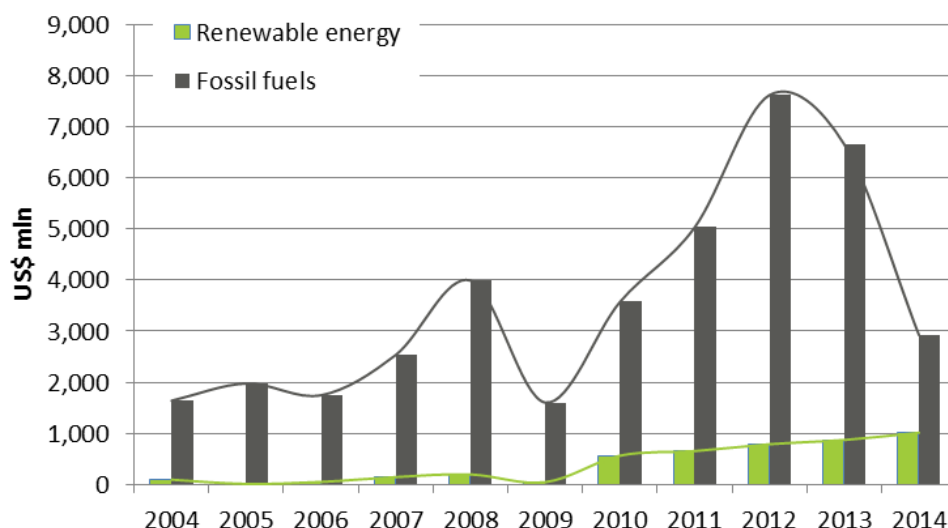
Table 34 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	513%	5%
Fossil fuels	136%	-2%

- Loans**

In the second half of the period under study Sumitomo Mitsui Financial increased its loans to the selected companies attributable to renewable energy by 627%, its loans to the selected companies attributable to fossil fuels increased by 110%. Figure 75 provides a more detailed picture of the changes in loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Loans to the selected companies attributable to renewable energy show a clear upward trend particularly since 2009, reaching nearly US\$ 1 billion per year by 2012. Loans to the selected companies attributable to fossil fuels far exceeded US\$ 1 billion throughout the period of study, though have shown a declining trend since 2012.

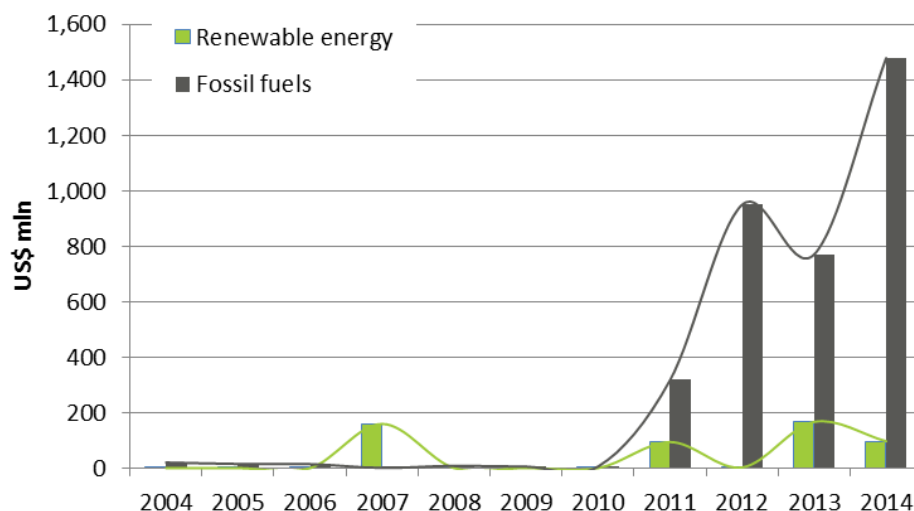
Figure 75 Sumitomo Mitsui Financial loans to the selected companies (2004-2014)



- Underwriting**

Underwriting services to renewable energy increased 125% in second half of the period of study. However, Sumitomo Mitsui Financial's underwriting services to the selected companies attributable to fossil fuels increased by a startling 5,599%. Underwriting services to renewable energy never exceeded US\$ 200 million between 2004 and 2014. Underwriting to fossil fuels, on the other hand, rose rapidly from a few million between 2007 and 2010, to more than US\$ 1.4 billion in 2014.

Figure 76 Sumitomo Mitsui Financial underwriting services to the selected companies (2004-2014)

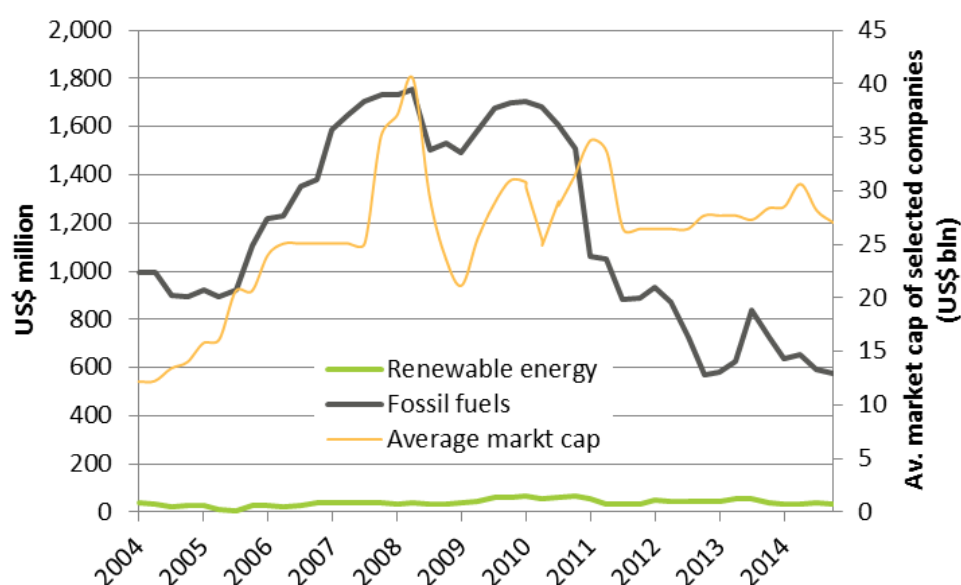


- **Shareholdings**

Sumitomo Mitsui Financial's average annual investments in selected companies attributable to renewable energy increased by 46% in the second half of the period of study. In the same period, shareholdings attributable to fossil fuels decreased by 22%. As a proportion of total shareholdings in selected companies, shareholdings attributable to renewable energy increased by 2%, while the proportion attributable to fossil fuels increased by 4%.

Sumitomo Mitsui Financial's investments in the shareholdings of the selected companies attributable to fossil fuels were consistently high throughout the period of study. From 2006 to 2010 there was a broad peak of over US\$ 1.2 billion, which wasn't aligned with the trends in average market capitalization of the selected companies. Shareholdings attributable to renewable energy were consistently low. However, shareholdings attributable to fossil fuels have been declining since 2010, although they have remained over US\$ 600 million on average.

Figure 77 Sumitomo Mitsui Financial shareholdings in selected companies 2004-2014



4.3.23 UBS (Switzerland)

This section analyses the financing provided by UBS to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

UBS's climate change commitments include the following areas:

- "Risk management: seeking to protect our clients', and our own, assets from climate change risks, within our sphere of influence;
- Investments: helping to mobilize private and institutional capital towards investments facilitating climate change mitigation and adaptation;
- Financing: supporting this transition as corporate advisor, and/or with our lending capacity;
- Research: offering our clients research capacity on climate change issues."

Table 35 shows that these claims might have some truth. Loans and underwriting services to renewable energy increased by 37% percent in the second half of the period of study compared to the first. Loans and underwriting services to the selected companies attributable to fossil fuels, on the other hand decreased by 21%. As a proportion of total loans and underwriting, loans and underwriting attributable to renewable energy increased by 2%, while the proportion attributable to fossil fuels increased by 3%.

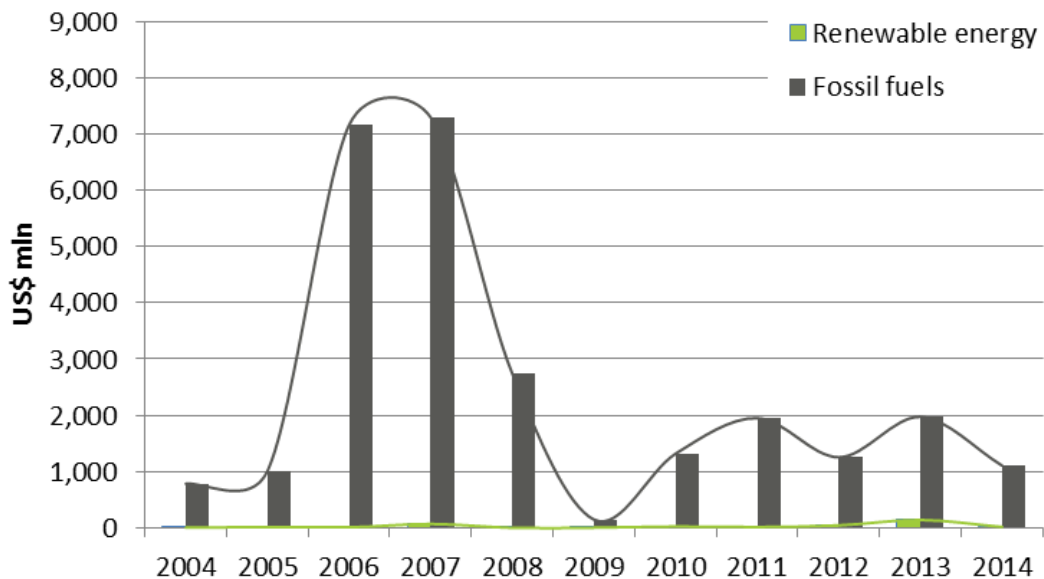
Table 35 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	37%	2%
Fossil fuels	-21%	3%

- **Loans**

Loans to the selected companies attributable to renewable energy increased by 140% in the second half of the period of study. Loans to the selected companies attributable to fossil fuels, on the other hand decreased by 60%. This seems to be a very positive relation. However, Figure 78 shows that this is not such a great achievement when one looks at the actual levels of loans to the selected companies attributable to renewable energy compared to fossil fuels. Although loans to the selected companies attributable to fossil fuels have decreased considerably since their peak in 2007, they still far exceed the loans to the selected companies attributable to renewable energy and renewable energy projects.

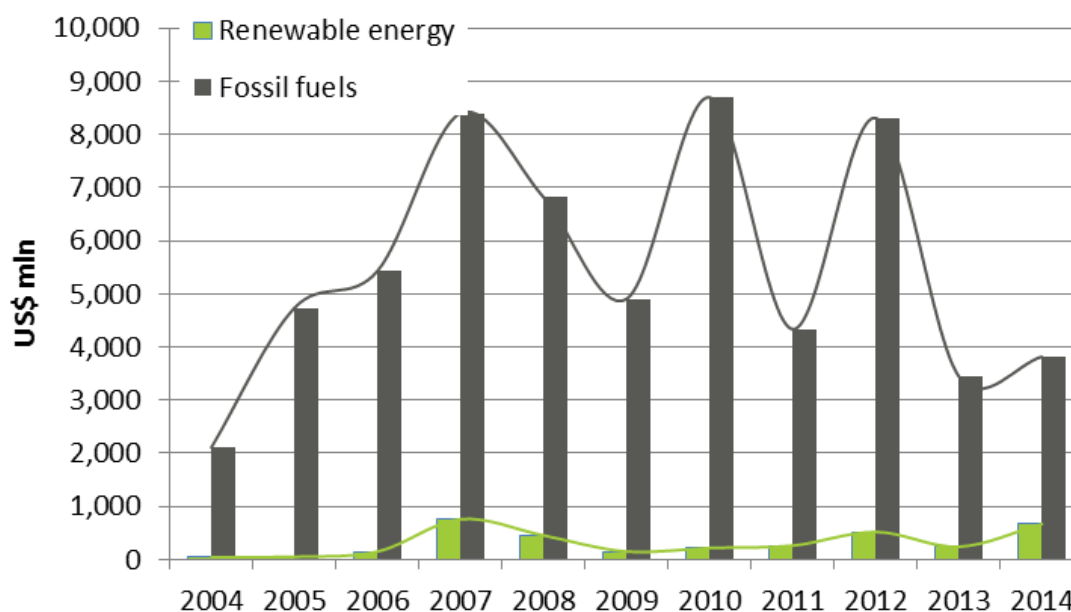
Figure 78 UBS loans to the selected companies (2004-2014)



- **Underwriting**

The underwriting services UBS provided to the selected companies attributable to fossil fuels increased by 4%. Underwriting services to renewable energy, on the other hand, increased by 30%. Again, the more detailed picture in Figure 79 provides the required nuance to these figures. Underwriting services to the selected companies attributable to fossil fuels were never below US\$ 2 billion, and through most of the period of study, hardly ever fell below US\$ 4 billion. Underwriting services to renewable energy, however, never exceeded US\$ 1 billion.

Figure 79 UBS underwriting services to the selected companies (2004-2014)



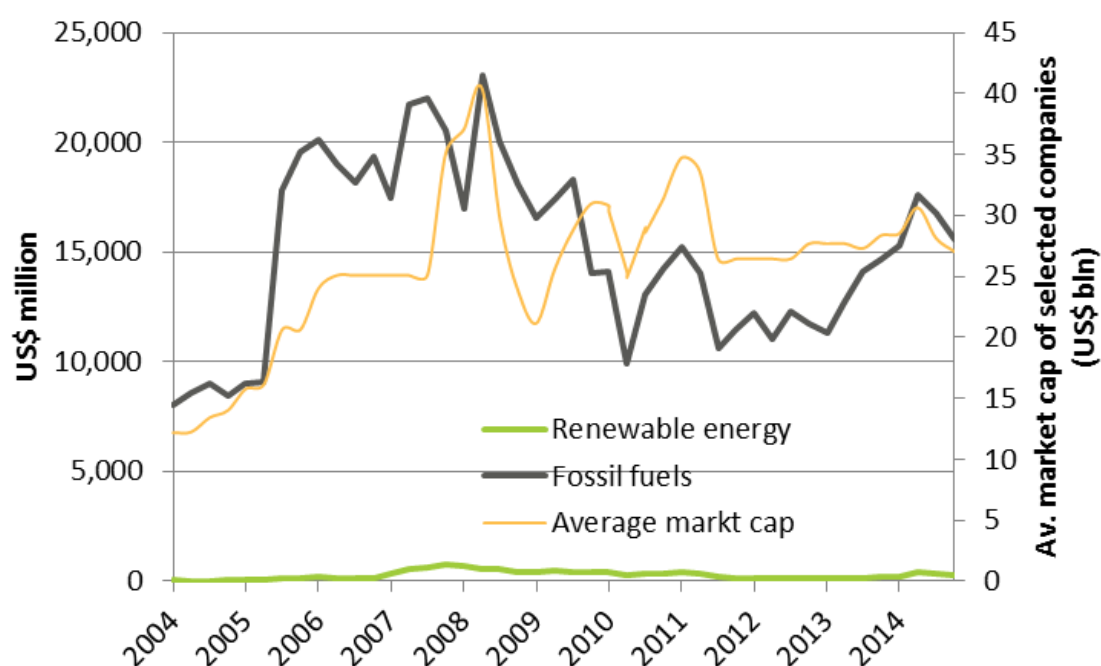
- **Shareholdings**

Average annual investments in selected companies attributable to renewable energy decreased by 13% in the second half of the period of study. Similarly, average annual investments in selected companies attributable to fossil fuels decreased by 19%. As a proportion of total average annual shareholdings, shareholdings attributable to fossil fuels increased by 22%, while the proportion attributable to renewable energy did not increase.

Figure 80 provides an outline of the investments by UBS in the shareholdings of the selected companies attributable to renewable energy. Investments in selected companies attributable to fossil fuels increased in 2005, before the average market capitalization increased. In 2009 investments in selected companies attributable to fossil fuels decreased before average market capitalization declined. However, there has been a steady upward trend since 2013.

Shareholdings attributable to renewable energy hardly exceeded half billion throughout the period of study, whereas shareholdings attributable to fossil fuels hardly fell below US\$ 10 billion.

Figure 80 UBS shareholdings in selected companies 2004-2014



4.3.24 UniCredit (Italy)

This section provides an analysis of the financing provided by UniCredit to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In May 2009 UniCredit announced their ‘Green Deal’, which includes the Group’s plans to “develop an innovative model in the banking industry that will measure the actual environmental impact of the loan portfolio in terms of GHG emissions, and therefore make it possible to steer lending decisions according to these criteria, thus enabling the Bank to contribute to the development of the Green Economy”.⁹⁶

Table 36 shows that contrary to what one might have hoped, UniCredit decreased its loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects by 21% in the second half of the period of study. Loans and underwriting to the selected companies attributable to fossil fuels, on other hand, only decreased by 2%. As a proportion of total loans and underwriting, loans and underwriting attributable to renewable energy decreased by 2%, while loans and underwriting to the selected companies attributable to fossil fuels increased by 3%.

Table 36 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	-21%	-2%

96 UniCredit (2009, May 6). “UniCredit announces its “Green Deal””, online: <https://www.unicreditgroup.eu/en/pressandmedia/pressreleases/2009/PressRelease0692.html>, viewed in August 2015.

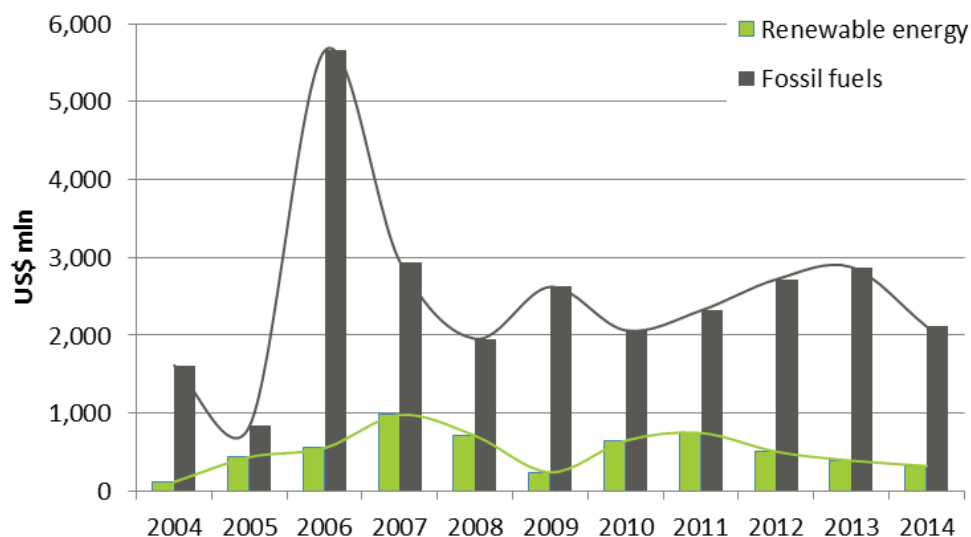
Energy source	Percent change	Proportion change
Fossil fuels	-2%	3%

- **Loans**

Loans provided by UniCredit to the selected companies attributable to renewable energy decreased by 6% in the second half of the period of study, as did Loans to the selected companies attributable to fossil fuels.

Figure 81 provides a more detailed picture of the changes in loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Having peaked at approximately US\$ 1 billion in 2007, loans to renewable have been on a declining trend ever since. Similarly, loans to the selected companies attributable to fossil fuels have been declining since their peak in 2006. This might indicate that UniCredit has started to focus on other sectors.

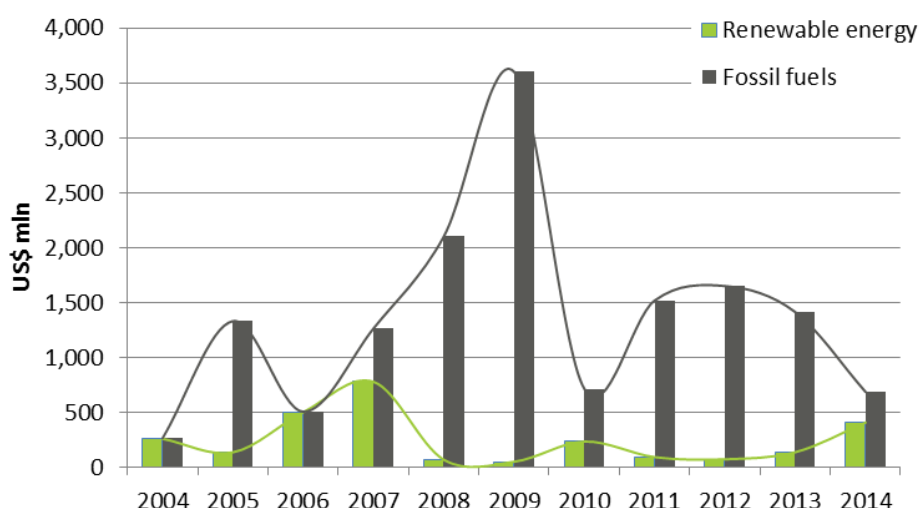
Figure 81 UniCredit loans to the selected companies (2004-2014)



- **Underwriting**

UniCredit provided 45% less underwriting services to renewable energy in the second half of the period of study. Underwriting to fossil fuels, on the other hand, increased by 7%. Figure 82 provides a more detailed overview of the changes. During the early years of the economic crisis, UniCredit provided more underwriting services to the selected companies attributable to fossil fuels than in the years before or after. There does seem currently be a downward trend. Underwriting to renewable energy does seem to have made a recovery since the global economic crisis, although there is a slight upward trend in 2013-2014.

Figure 82 UniCredit underwriting services to the selected companies (2004-2014)

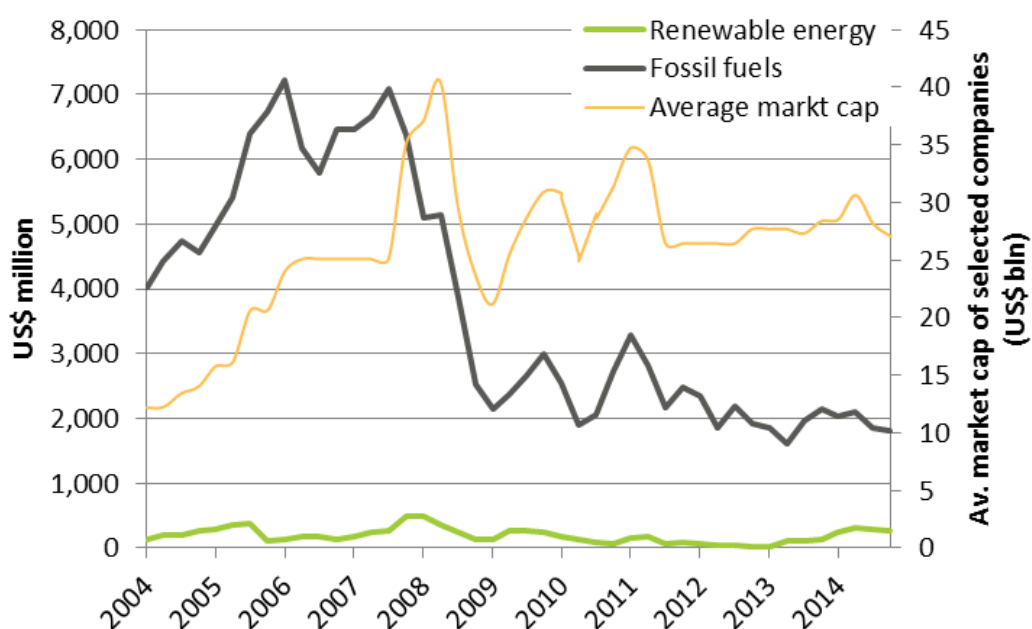


- Shareholdings**

Average annual investments in selected companies attributable to renewable energy decreased by 47% in the second half of the period of study. Average annual investments in selected companies attributable to fossil fuels, on the other hand, also decreased by 56%. As a proportion of total investments in selected companies, shareholdings attributable to renewable energy increased by 1%. The proportion attributable to fossil fuels, on the other hand, increased by 5%.

Figure 83 shows that UniCredit's investments in shareholdings of the selected companies attributable to renewable energy have fluctuated throughout the period of study, and have on average decreased. A positive development, however, is that UniCredit's investments in selected companies attributable to fossil fuels have decreased since 2007.

Figure 83 UniCredit shareholdings in selected companies 2004-2014



4.3.25 Wells Fargo (United States)

This section provides an analysis of the financing provided by Wells Fargo to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In 2005, Wells Fargo announced their 10-point Environmental Commitment, which aims to “more effectively integrate environmental responsibility into its business practices and procedures.” This commitment includes (among others): “[US] \$1+ billion in lending, investments, and other financial commitments over the next five years to environmentally-beneficial business opportunities including sustainable forestry, renewable energy, water resource management, waste management, energy efficiency, and “green” home construction and development”.⁹⁷

In April 2012 Wells Fargo announced “an enhanced commitment to environmental leadership that includes the following goals to be achieved by 2020: [US] \$30 billion in loans and investments in support of a “greener” economy, [US] \$100 million in community grants for grassroots environmental initiatives”.⁹⁸

These commitments seem to have translated in action. Table 37 shows that Wells Fargo increased its loans and underwriting services to the selected companies attributable to renewable energy by 33% in the second half of the period of study. In the same period loans and underwriting to the selected companies attributable to fossil fuels increased by 2%. As a proportion of total loans and underwriting, loans and underwriting attributable to renewable energy increased by 1%, whereas loans and underwriting attributable to fossil fuels increased by 5%.

Table 37 Percentage Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	33%	1%
Fossil fuels	2%	5%

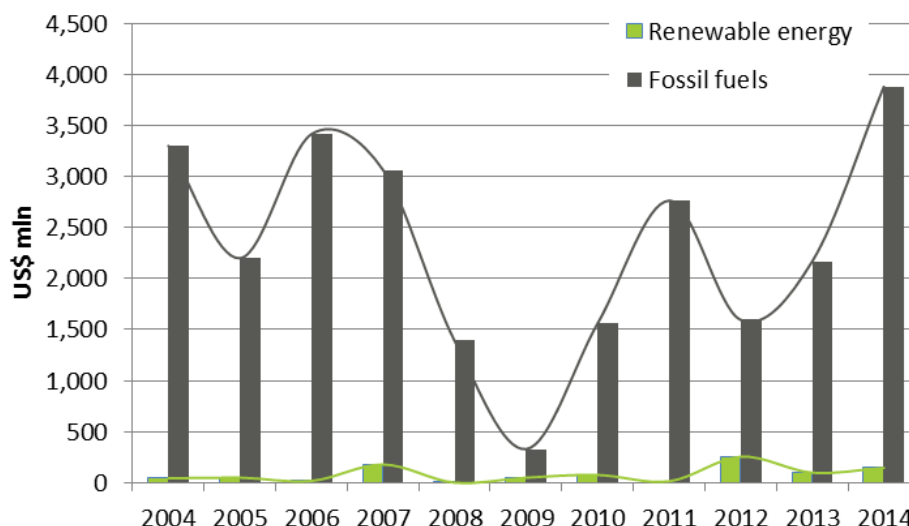
- **Loans**

Loans to the selected companies attributable to renewable energy increased by 94% in the second half of the period of study, while loans to the selected companies attributable to fossil fuels actually decreased by 10%. At face value this is a positive development. However, when looking at Figure 84 we see that these changes are comparatively insignificant. The total values of loans attributable to renewable energy never exceed US\$ 250 million, while for most of the period of study loans to the selected companies attributable to fossil fuels exceeded US\$ 1.5 billion. Of concern is also the upward trend of loans to the selected companies attributable to fossil fuels since 2009.

97 Wells Fargo (2012, April, 23). “Wells Fargo: \$30+ Billion in Environmental Investments by 2020”, online: https://www.wellsfargo.com/about/press/2012/20120423_WellsFargo30Billion/, viewed in August 2015.

98 Equator Principles (2005, July 11). “Wells Fargo & Company Announces 10-Point Environmental Commitment, \$1 Billion Lending Target”, online: <http://www.equator-principles.com/index.php/all-ep-association-news/ep-association-news-by-year/58-2005/139-wells-fargo-a-company-announces-10-point-environmental-commitment-1-billion-lending-target>, viewed in August 2015.

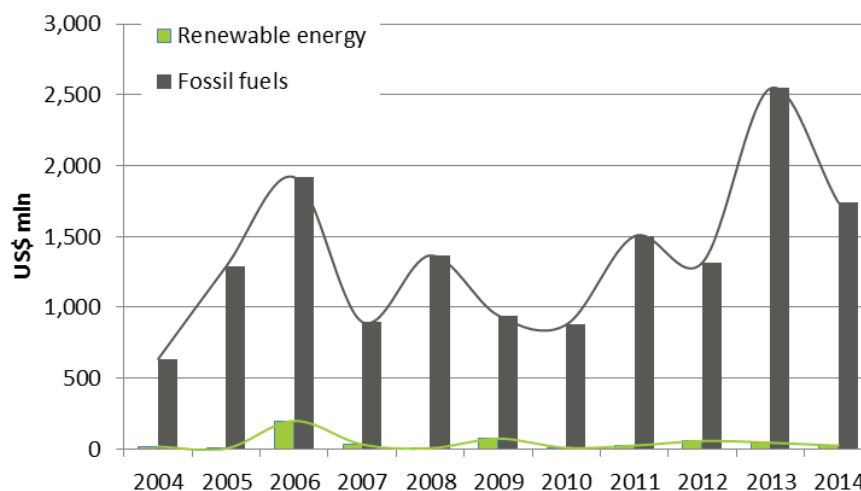
Figure 84 Wells Fargo loans to the selected companies (2004-2014)



- Underwriting**

Underwriting services provided by Wells Fargo to renewable energy decreased by 33% in the second half of the period of study. Underwriting to fossil fuels, on the other hand, actually increased by 28%. Of even greater concern are the facts in Figure 85: the difference in values of underwriting services provided to renewable energy and fossil fuels. Hardly ever much more than US\$ 50 million, underwriting to fossil fuels hardly dropped below US\$ 1 billion.

Figure 85 Wells Fargo underwriting services to the selected companies (2004-2014)



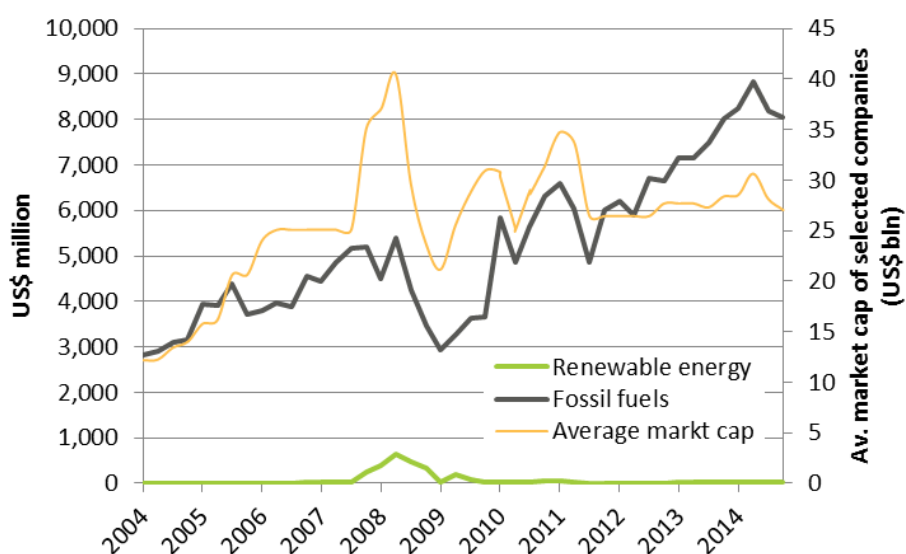
- Shareholdings**

The average annual investments of Wells Fargo in selected companies attributable to renewable energy decreased by 75% in the second half of the period of study. Average annual investments in selected companies attributable to fossil fuels, on the other hand, increased by 66%. As a proportion of total shareholdings in selected companies, shareholdings attributable to renewable energy decreased by -2%, while shareholdings attributable to fossil increased by 1%.

Figure 86 shows the trends in Wells Fargo's investments in the shareholdings of the selected companies. Generally the trend of investments in selected companies attributable to fossil fuels has followed fluctuations in average market capitalization of the selected companies. Since 2011 these investments have gradually increased. Investments in selected companies attributable to renewable energy have generally not exceeded US\$ 50 million compared with US\$ 3 billion in fossil fuels.

In many ways this seems to contradict the commitments made by Wells Fargo described at the beginning of this section.

Figure 86 Wells Fargo shareholdings in selected companies 2004-2014

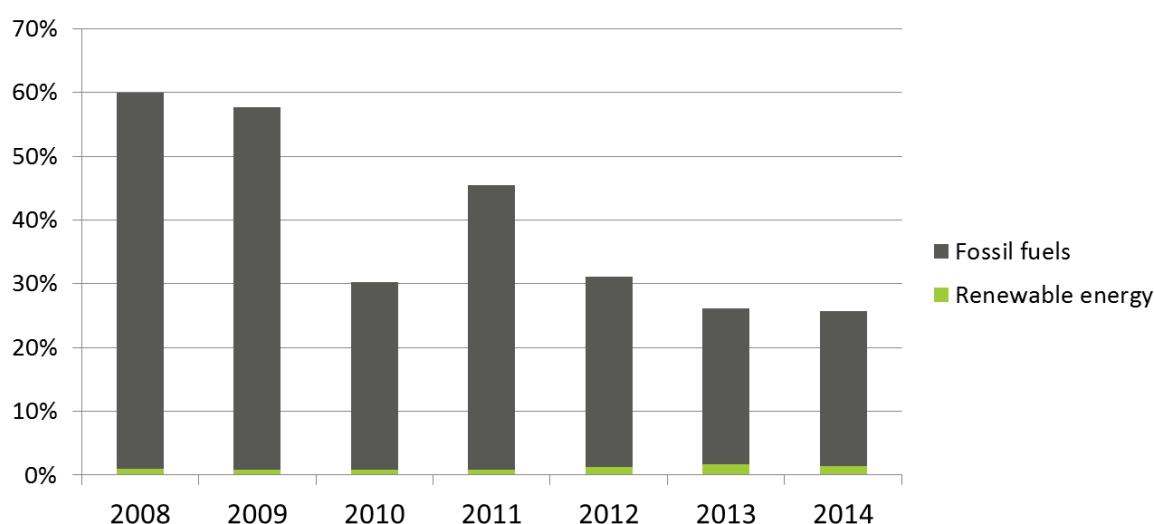


Chapter 5 Belgium

This chapter outlines the trends in financing of the 10 selected financial institutions active in Belgium towards the selected companies attributable to fossil fuels (coal mining and oil & gas), renewable energy input equipment manufacturers (solar panels, concentrated solar power plants, wind turbine manufacturers, and geothermal power turbine and engineering companies), renewable energy projects, and utility companies, over the period 2004-2014.

Figure 87 provides an overview of the changes in portfolio composition of the researched utility companies. It shows that there has been a very gradual increase in renewable energy (solar, wind and geothermal), however, the electricity is still predominantly generated through fossil fuels. There does, however, seem to be a decline in use of fossil fuels, most likely being replaced by nuclear or other inputs not included in the scope of this research. The remaining installed capacity is composed energy sources beyond the scope of this research (see section 2.3.3).

Figure 87 Annual portfolio proportions of researched utility companies active in Belgium



5.1 Loans and underwriting

This section provides an analysis of the loans and underwriting provided by financial institutions active in Belgium to the selected companies and renewable energy projects. Section 5.1.1 provides an outline of the annual changes in the financing to the selected companies. Section 5.1.2 ranks the financial institutions active in Belgium according to their financing of fossil fuels.

5.1.1 Annual analysis

Figure 88 shows that on average the financial institutions provided more than US\$ 10 billion annually in loans to the selected companies attributable to fossil fuels. There were slight declines in 2009 and 2012. It remains to be seen whether the decline in 2014 is part of a downward trend or simply a dip.

Loans to the selected companies attributable to renewable energy remained low throughout the period of study, and have, in fact, declined since a high in 2005. Since 2013 there seems to be a slight upward trend in loans to the selected companies attributable to renewable energy and renewable energy projects.

Figure 88 Annual loans provided by financial institutions active in Belgium to the selected companies

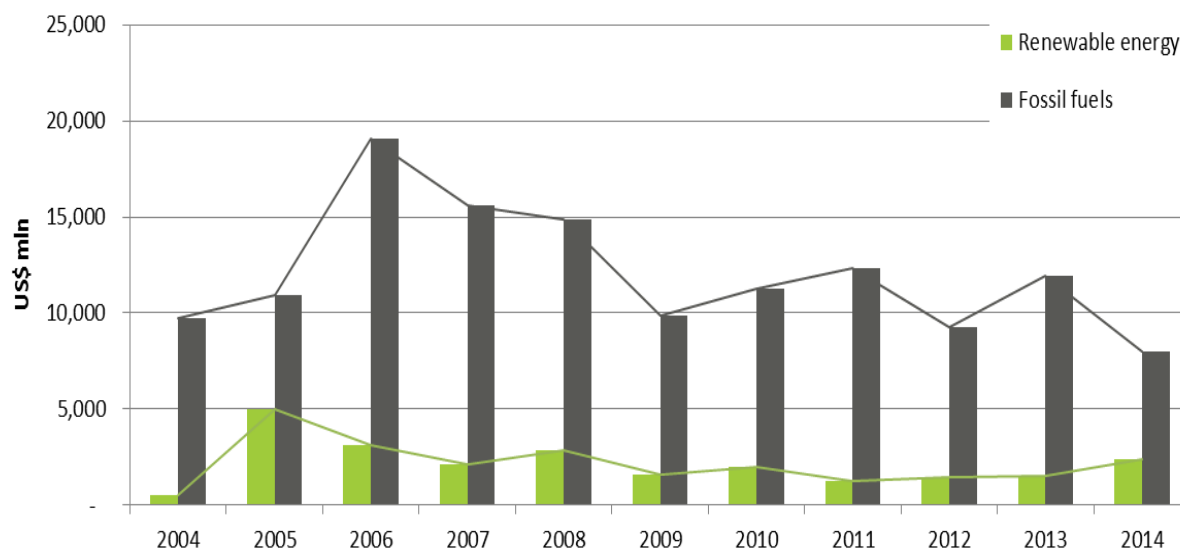
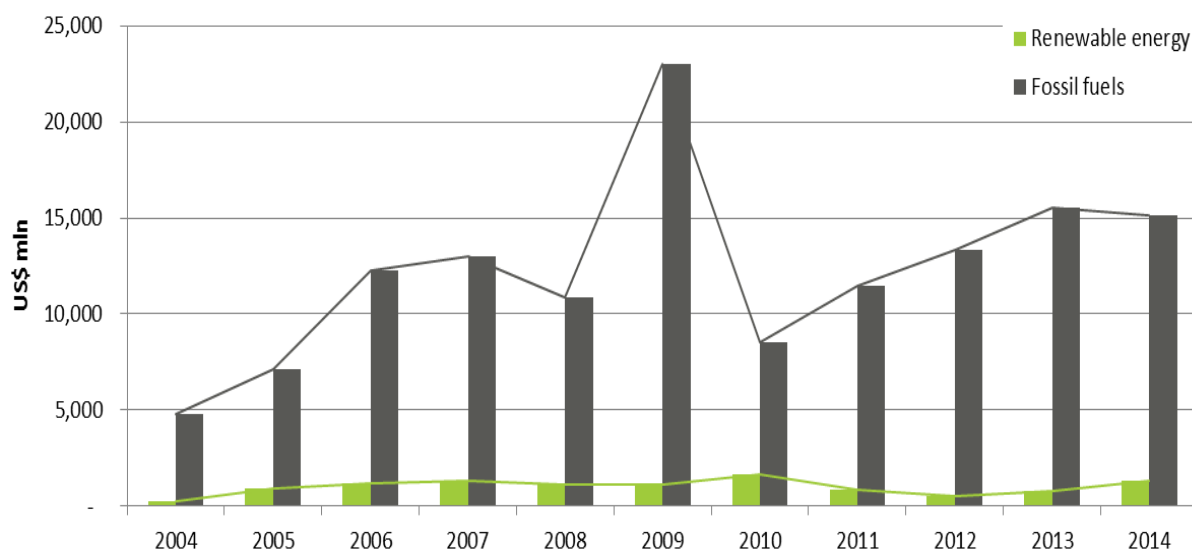


Figure 89 provides an overview of the underwriting services provided by financial institutions active in Belgium to the selected companies. The figure shows the large difference between underwriting for fossil fuels and renewable energy. Since 2012 the gap seems to have grown continually larger.

Figure 89 Annual underwriting services provided by top 25 financial institutions to the selected companies



5.1.2 Rankings

This section provides a ranking of the financial institutions active in Belgium in terms of the value of their loans and underwriting services attributable to and fossil fuels. Figure 90 shows the ranking of the top financiers of the selected companies attributable to fossil fuels for the period 2009 to 2014. Zooming in on the most recent five years provides a more current picture of the financial activities of the selected financial institutions with regard to their financing of the selected companies attributable to fossil fuels and renewable energy. The top three places are all occupied by large foreign financial institutions. In the period 2009 to 2014, BNP Paribas and Deutsche Bank each provided approximately US\$ 50 billion to the selected companies attributable to fossil fuels. In the same period they only provided approximately US\$ 5 billion in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects.

Figure 90 shows that this difference in financing to fossil fuels and renewable energy is common to the top 3 financial institutions. For the smaller banks, this difference is less pronounced. Belfius Bank actually provided more loans and underwriting services to the selected companies attributable to renewable energy than fossil fuels in the period 2009-2014. Triodos Bank only provided financing to renewable energy.

Figure 90 Ranking of the top financiers of the selected companies attributable to fossil fuels (loans & underwriting, US\$ mln, 2009-2014)

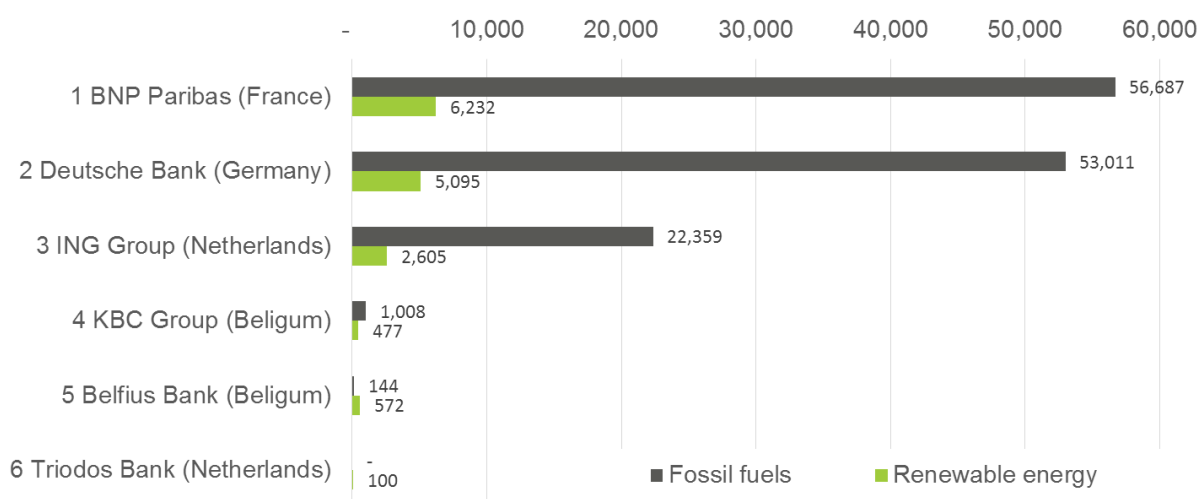


Table 38 provides an overview of the loans and underwriting to the selected companies attributable to fossil fuels and renewable energy. It shows that for 3 of the 6 financial institutions the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels was higher than 90%. This indicates the huge disparity between the financing of renewable energy and fossil fuels.

Table 38 also shows the percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Only one of the researched financial institutions in Belgium decreased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). Four financial institutions actually increased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). Belfius Bank had the highest increase in proportions of fossil fuels of 11%.

Table 38 Overview of loans and underwriting to the selected companies attributable to fossil fuels and renewable energy, and renewable energy projects (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
BNP Paribas	France	56,687	6,232	90%	1%
Deutsche Bank	Germany	53,011	5,095	91%	4%
ING Group	Netherlands	22,359	2,605	90%	4%
KBC Group	Belgium	1,008	477	68%	-7%
Belfius Bank	Belgium	144	572	20%	11%
Triodos Bank	Netherlands	-	100	0%	0%
Total		133,210	15,082	90%	3%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

5.2 Shareholdings

This section provides an analysis of the investments in shareholdings by financial institutions active in Belgium in the selected companies. Section 5.2.1 provides an outline of the annual changes in the investments in selected companies. Section 5.2.2 ranks the financial institutions active in Belgium according to their investments in selected companies attributable to fossil fuels.

5.2.1 Annual analysis

Figure 91 shows that the average investments in selected companies attributable to fossil fuels, generally followed the fluctuations in the average market capitalization of the selected companies. In the period 2006-2007, these investments were slightly above the general trend lines. On a positive note, since 2012, investments in selected companies attributable to fossil fuels have generally been lower than the trend lines.

Investments in selected companies attributable to renewable energy were the highest in the period 2007-2010. They have declined since, though show an upward trend as of 2014.

Figure 91 Annual investments by financial institutions active in Belgium in selected companies

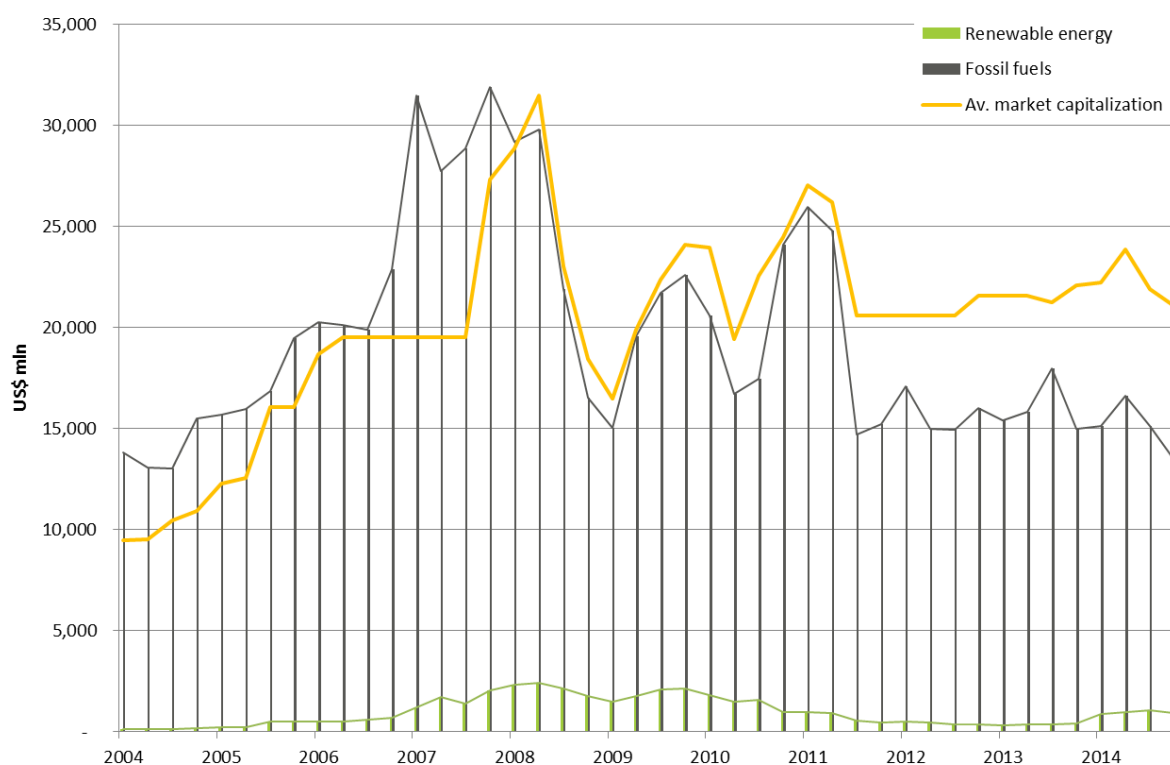


Table 39 shows the large difference between investments in selected companies attributable to renewable energy and investments in selected companies attributable to fossil fuels.

Table 39 Average annual investments in selected companies attributable to renewable energy (US\$ mln)

Year	Renewable energy	Fossil fuels
2004	132	13,828
2005	363	16,982
2006	585	20,770
2007	1,586	29,977
2008	2,160	24,349
2009	1,865	19,713
2010	1,469	19,703

Year	Renewable energy	Fossil fuels
2011	725	20,157
2012	415	15,752
2013	364	16,036
2014	960	15,075

Table 40 shows that on average, in the period 2004-2014, financial institutions active in Belgium invested 3% of their total investments in selected companies in renewable energy and 64% in fossil fuels.

Table 40 Average annual % investment in renewable energy

Year	Renewable energy	Fossil fuels
2004	1%	60%
2005	1%	50%
2006	1%	31%
2007	2%	36%
2008	6%	72%
2009	7%	74%
2010	5%	70%
2011	3%	76%
2012	2%	78%
2013	2%	82%
2014	5%	77%
Average	3%	64%

5.2.2 Rankings

This section provides a ranking of the financial institutions active in Belgium in terms of the value of their investments attributable to fossil fuels. Figure 92 provides a ranking of the top financial institutions active in Belgium on the basis of their average annual investments in the selected companies attributable to fossil fuels in the period 2009-2014. Deutsche Bank, BNP Paribas and KBC Group occupy the top three positions with the highest average annual investments in selected companies attributable to fossil fuels. Deutsche Bank invested on average more than US\$ 10 billion in fossil fuels in the period 2009-2014. BNP Paribas had an annual average investment in fossil fuels of over US\$ 5 billion and KBC Group invested on average US\$ 1 billion in fossil fuels.

Figure 92 also shows the large gap between average annual investments in selected companies attributable to fossil fuels and renewable energy. Only one financial institution had an average annual investment in renewable energy of over US\$ 0.5 billion, Deutsche Bank. ING Group, F. van Lanschot and VDK Spaarbank on average had no or only marginal investments in selected companies attributable to renewable energy.

Figure 92 Ranking of the top average annual investors in the selected companies attributable to fossil fuels (US\$ mln, 2009-2014)

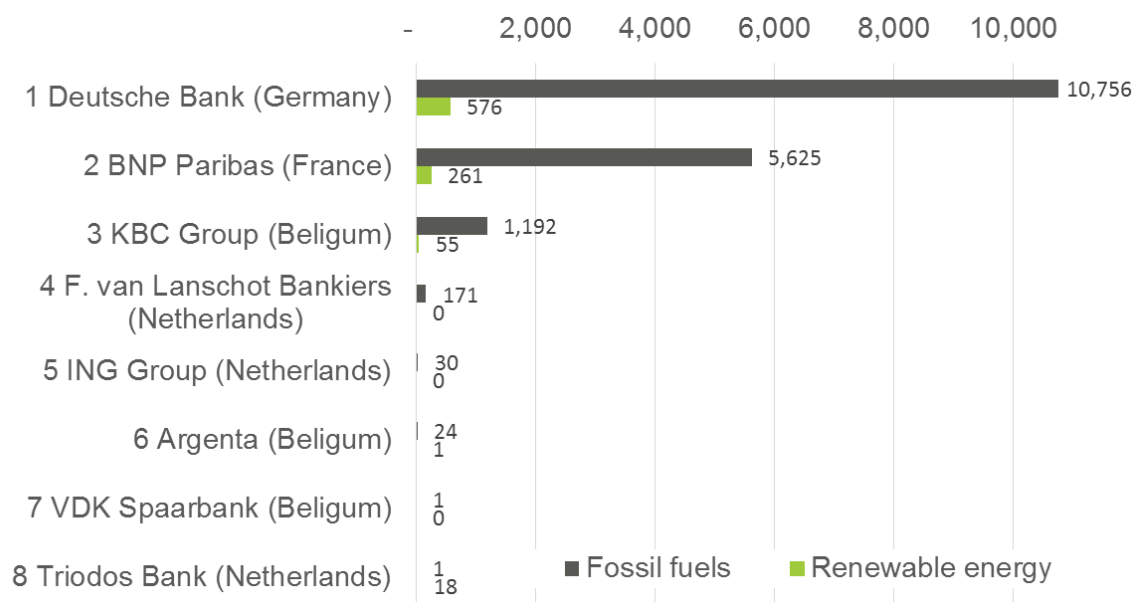


Table 41 provides an overview of the investments in the selected companies attributable to fossil fuels and renewable energy. It shows that for 7 of the 8 financial institutions the proportion of fossil fuels in their total investments in the selected companies attributable to renewable energy and fossil fuels was higher than 90%. For two financial institutions this proportion was essentially 100%. This indicates the huge disparity between the financing of renewable energy and fossil fuels. Only Triodos Bank had a very low proportion of investments in selected companies attributable to fossil fuels, of 4% of all investments in selected companies attributable to renewable energy and fossil fuels.

Table 41 also shows the change in the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in the investments in the selected companies attributable to renewable energy and fossil fuels. Three financial institutions marginally decreased the proportion of fossil fuels in the investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). However, these decreases were very small, not exceeding 2 percentage points. Three financial institutions actually increased the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). F. van Lanschot had the highest proportion increase.

Table 41 Overview of shareholdings in the selected companies attributable to fossil fuels and renewable energy (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Deutsche Bank	Germany	10,756	576	95%	-1%
BNP Paribas	France	5,625	261	96%	1%

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
KBC Group	Belgium	1,192	55	96%	2%
F. van Lanschot Bankiers	Netherlands	171	0	100%	14%
ING Group	Netherlands	30	0	100%	0%
Argenta	Belgium	24	1	94%	-2%
VDK Spaarbank	Belgium	1	0	99%	-1%
Triodos Bank	Netherlands	1	18	4%	n/a
Total		17,799	912	95%	0%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

5.3 Financial institution analysis

This section provides an analysis of the changes in values of loans, underwriting services and investments in shares in selected companies that can be attributed to renewable energy and fossil fuels individually for the financial institutions active in Belgium. The sub-sections are ordered alphabetically by bank name.

5.3.1 Argenta

This section provides an analysis of the financing provided by Argenta to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

• Loans & underwriting

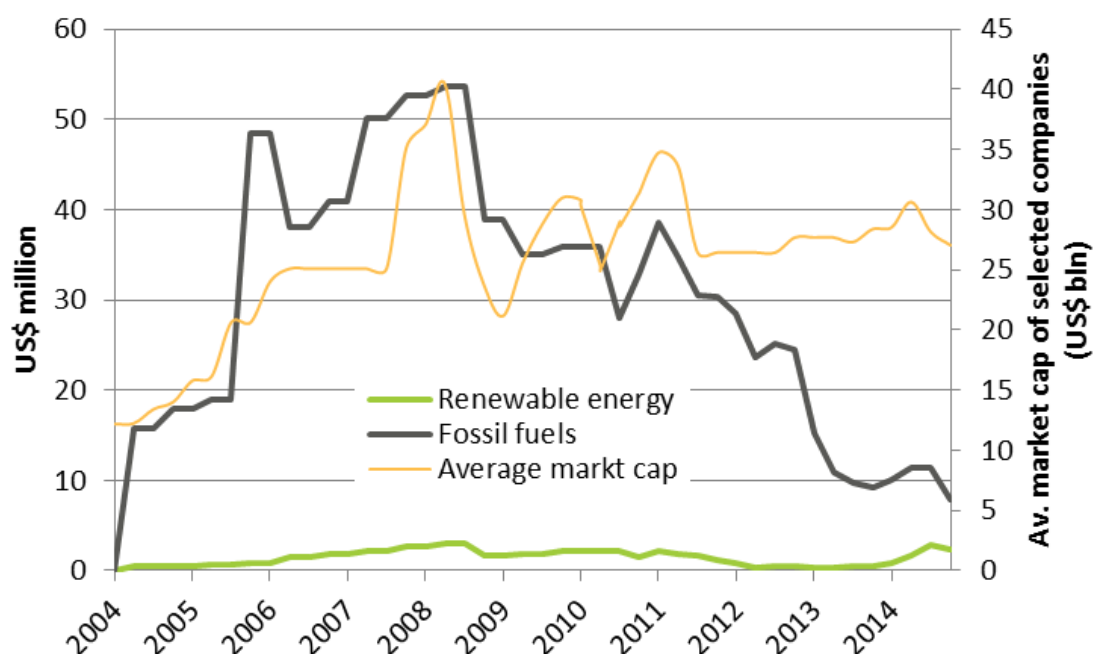
This research did not identify any loans or underwriting services provided by Argenta to the selected companies.

• Shareholdings

Argenta's average annual investments in selected companies attributable to renewable energy decreased in the second half of the period of study by 6%. On a positive note, however, average annual investments in selected companies attributable to fossil fuels decreased by 31%. As a proportion of total average annual investments, shareholdings attributable to renewable energy increased by 1%, while the proportion of investments attributable to fossil fuels decreased by 2%. Figure 93 shows that Argenta's investments in selected companies attributable to fossil fuels generally followed the fluctuations of the average market capitalization of the selected companies. Since 2011 there has been a sharp decline in Argenta's shareholdings attributable to fossil fuels.

Argenta's investments in selected companies attributable to renewable energy increased during the economic crisis, before decline in 2011. Investments in selected companies attributable to renewable energy have started to pick up again in 2014.

Figure 93 Argenta shareholdings in selected companies 2004-2014



Argenta responded to the research team that they had divested from a number of fossil fuel companies. The information provided was not detailed enough to integrate into the dataset. However, Figure 93 also reflects Argenta's claim.

5.3.2 Belfius Bank

This section provides an analysis of the financing provided Belfius to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Table 42 shows that Belfius Bank decreased its total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects by 60%. At the same time, Belfius Bank increased its loans and underwriting to the selected companies attributable to fossil fuels by 4%. As a proportion of all loans and underwriting to the selected companies, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects decreased by 26%, while the proportion attributable to fossil fuels increased by 8%.

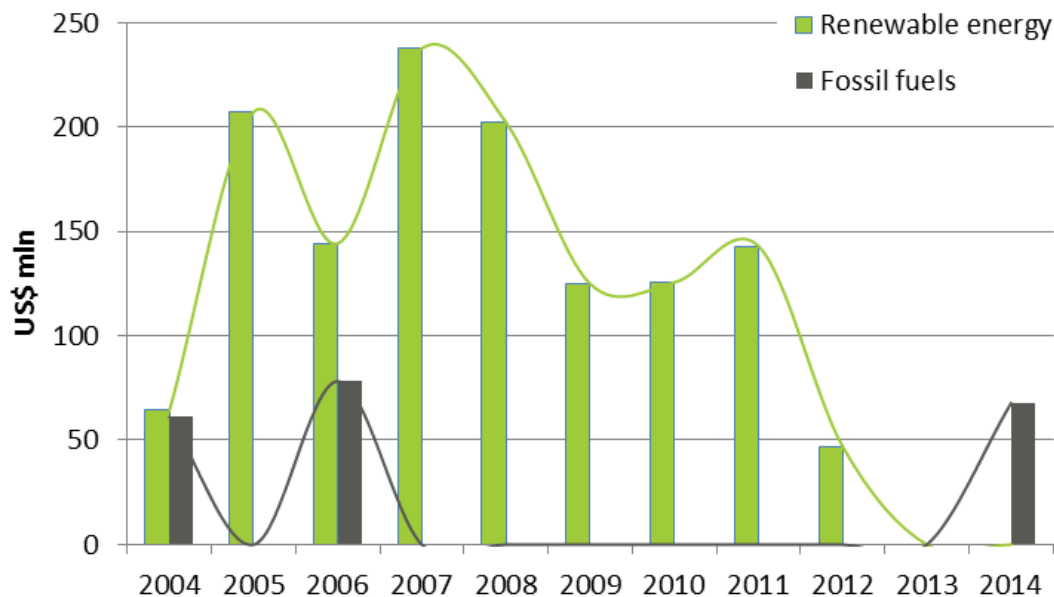
Table 42 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	-60%	-26%
Fossil fuels	4%	8%

- **Loans**

Belfius Bank decreased its loans to the selected companies attributable to renewable energy by 59%. During the same period, it reduced its loans to the selected companies attributable to fossil fuels by 51%. Figure 94 shows that generally, throughout the period of study, Belfius Bank provided more loans to the selected companies attributable to renewable energy than to fossil fuels. Loans to the selected companies attributable to renewable energy on average exceeded US\$ 100 million per year. Loans to the selected companies attributable to fossil fuels were only identified in three years. The fact that there were no loans to the selected companies attributable to renewable energy in 2014 is concerning, particularly as there were Loans to the selected companies attributable to fossil fuels.

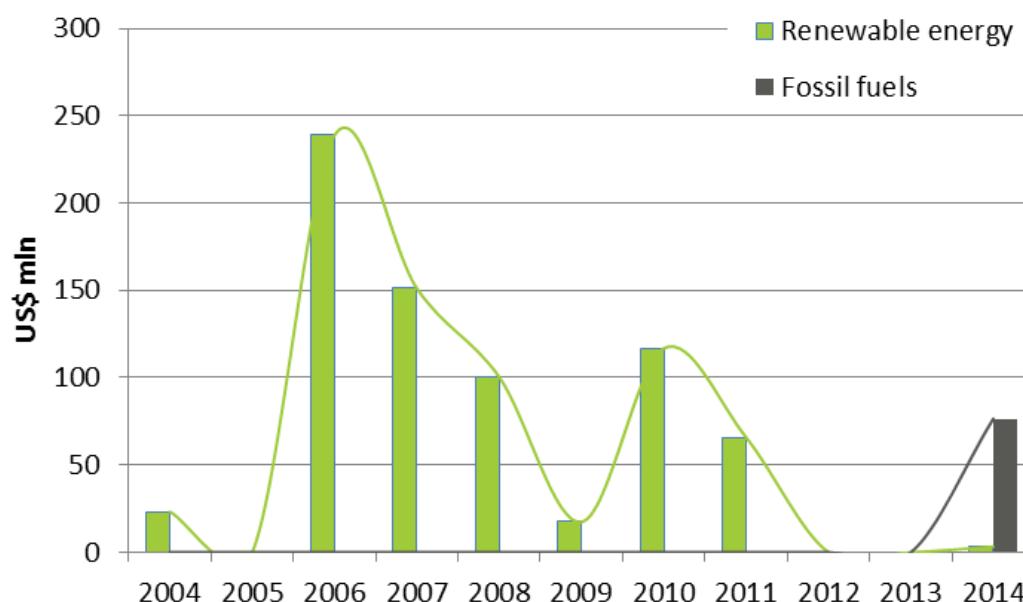
Figure 94 Belfius Bank loans to the selected companies (2004-2014)



- **Underwriting**

Belfius Bank provided 63% less underwriting services to renewable energy in the second half of the period of study than in the first. Belfius Bank only started providing underwriting services to the selected companies attributable to fossil fuels in the second half of the period of study. Figure 95 shows that while the general trend in underwriting to renewable energy has been decreased, for many years there was no underwriting to fossil fuels. The first underwriting of fossil fuels occurred in 2014. Hopefully, Belfius Bank will decrease its underwriting to fossil fuels and increase its underwriting to renewable energy in the future.

Figure 95 Belfius Bank underwriting services to the selected companies (2004-2014)



- **Shareholdings**

Since restructuring Belfius Bank no longer has asset management activities.

5.3.3 BNP Paribas

This section provides an analysis of the financing provided by the BNP Paribas to the selected companies that can be attributed to renewable energy and fossil fuels.

In 2009, BNP Paribas stated that “BNP Paribas Asset Management (BNP PAM) encourages companies to consider climate change issues in their investment decisions.”⁹⁹

In 2010, BNP Paribas created a Climate Change Steering Committee “to identify the risks and opportunities related to climate change and address ways in which to support the transition to a low carbon economy.” The bank also endorsed the Climate Principles in 2010. BNP Paribas also discloses its carbon information to the Carbon Disclosure Project.¹⁰⁰

BNP Paribas, in 2013, stated “BNP Paribas has made combating climate change the cornerstone of its environmental responsibility. To help tackle this critical issue for ecosystems, communities and the global economy, the Group seeks to reduce the direct and indirect impact of its business activities. Meanwhile, the BNP Paribas Foundation supports scientific research into the fundamental mechanisms of the world’ climate and the impact of their disruption.”¹⁰¹

99 BNP Paribas (2010, July), *Report on Environmental and Social Responsibility 2009*, p. 12.

100 BNP Paribas (2011, May), *2010 Corporate Social Responsibility Report*, p. 14-15.

101 BNP Paribas (2014, February), *2013 Facts and Figures*, p. 53.

In 2014, BNP Paribas stated that “[a]mong its environmental initiatives BNP Paribas has chosen to prioritise its contribution by combating climate change. The Group aims to reduce the environmental impacts resulting indirectly from its banking activities and directly from its own operations. In practical terms, BNP Paribas has 3 commitments: finance the transition to renewable energy; reduce its own environmental footprint (the target to reduce CO2 emissions per employee by 10% between 2012 and 2015 has almost been reached); and support research into climate change.”¹⁰²

More recently, BNP Paribas stated that, “[i]n 2015, the year that Paris will be hosting the International Climate Conference, BNP Paribas will be making an even greater commitment to financing the energy transition by mobilising all resources available to it. And in this way we will continue to make progress as a responsible bank.”¹⁰³

BNP Paribas is member of UNEP Finance Initiative and signatory to the UN Principles for Responsible Investment.

Table 43 shows that BNP Paribas’ total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects decreased by 28%, while loans and underwriting to the selected companies attributable to fossil fuels decreased by 20%. As a proportion of total loans and underwriting, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects did not increase in the second half of the period of study. The proportion of loans and underwriting to the selected companies attributable to fossil fuels of the total loans and underwriting increased by 6% in the second half of the period of study. This undermines the commitments BNP Paribas has made to combat climate change and finance renewable energy.

Table 43 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	-28%	0%
Fossil fuels	-20%	6%

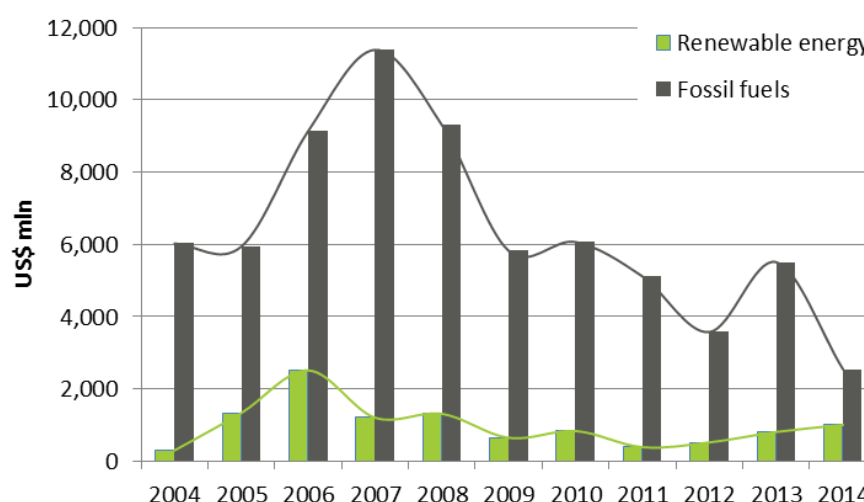
- **Loans**

BNP Paribas provided 44% fewer loans to the selected companies attributable to renewable energy in the second half of the period of study. Loans to the selected companies attributable to fossil fuels decreased by 42%. Figure 27 shows that BNP Paribas provided more than US\$ 2 billion in loans to the selected companies attributable to renewable energy in 2006. However, levels have fallen to between US\$ 300 million and US\$ 1 billion ever since. After a height of US\$ 12 billion in 2007, loans to the selected companies attributable to fossil fuels have gradually been decreasing. Loans to the selected companies attributable to fossil fuels reached a low of approximately US\$ 2.5 billion in 2014.

102 BNP Paribas (2015, June), *2014 Annual Report*, p. 8-9.

103 BNP Paribas (2015, June), *2014 Corporate Social Responsibility Report*, p. 4.

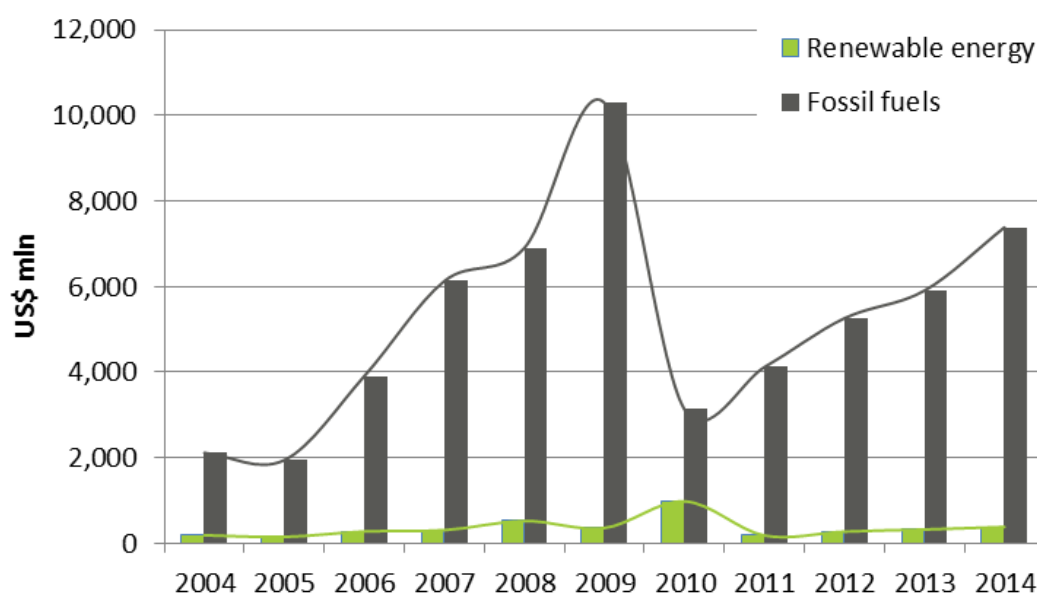
Figure 96 BNP Paribas loans to the selected companies (2004-2014)



- **Underwriting**

Underwriting to renewable energy increased by 43% in the second half of the period of study, while underwriting to fossil fuels increased by a lesser 18%. Figure 28 shows that underwriting to renewable energy has not exceeded US\$ 1 billion, but has generally fluctuated between US\$ 250 million and US\$ 400 million. The peak in renewable energy financing in 2010 did not last. Underwriting to fossil fuels, on the other hand, has generally been over US\$ 4 billion. After a decline in 2010 underwriting to fossil fuels has been on a concerning upward trajectory.

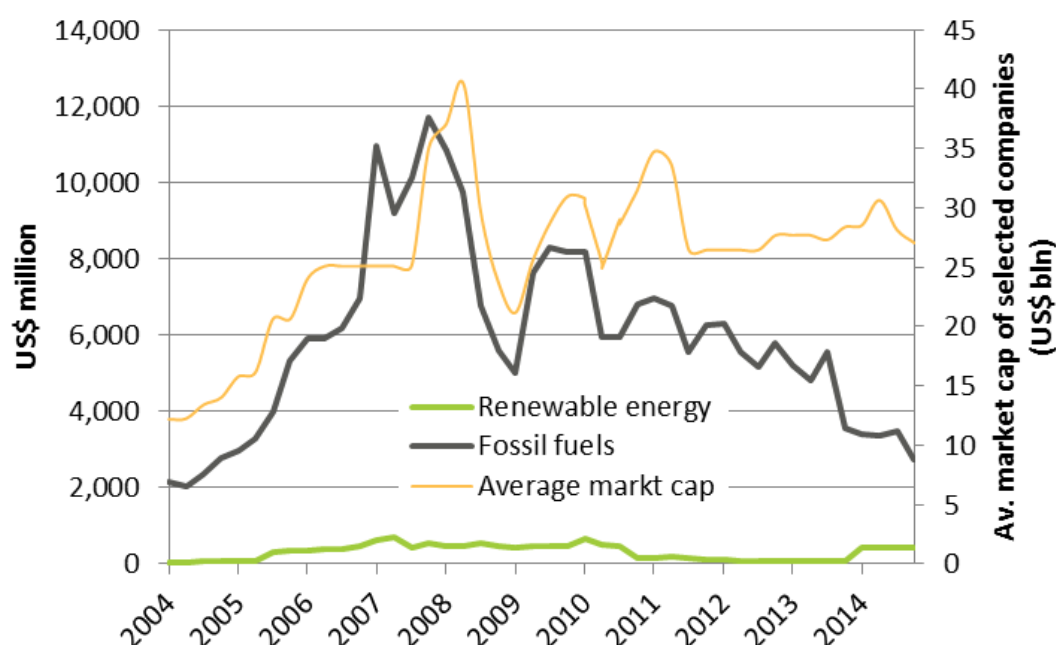
Figure 97 BNP Paribas underwriting services to the selected companies (2004-2014)



- **Shareholdings**

BNP Paribas' total average annual investments in selected companies attributable to renewable energy declined 25% in the second half of the period of study. Total average annual investments in selected companies attributable to fossil fuels decreased by a lesser 13%, but seem to be on a steadily declining trend since 2010. As a proportion of total average annual investments, investments in selected companies attributable to renewable energy increased by 2%, while the proportion of investments in selected companies attributable to fossil fuels increased by 50%. Figure 29 shows that average annual investments in selected companies attributable to renewable energy did not reach above US\$ 400 million, while investments in selected companies attributable to fossil fuels have always been over US\$ 2 billion.

Figure 98 BNP Paribas shareholdings in selected companies 2004-2014



5.3.4 Deutsche Bank

This section provides a description of the financing provided by the Deutsche Bank to the selected companies that can be attributed to renewable energy and fossil fuels.

Table 44 shows that Deutsche Bank's total loans and underwriting attributable to renewable energy decreased by 27% in the second period of study. Financing to fossil fuels increased by 8%. As a proportion of total loans and underwriting, financing to renewable energy decreased by 1%, while the proportion of loans and underwriting to the selected companies attributable to fossil fuels of the total loans and underwriting increased by 13%.

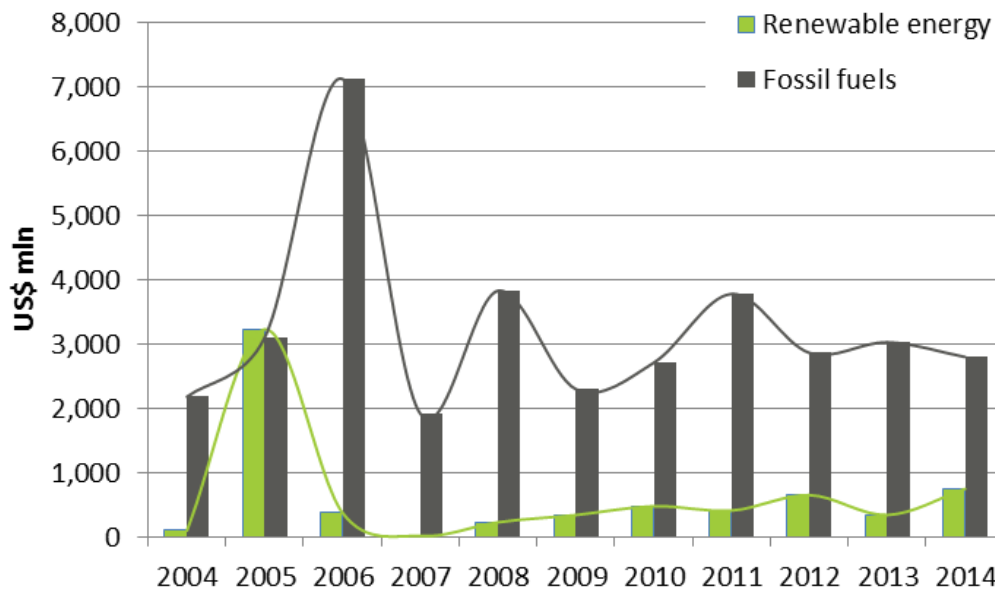
Table 44 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	-27%	-1%
Fossil fuels	8%	13%

- **Loans**

In the second half of the period of study, Deutsche Bank decreased its loans to the selected companies attributable to renewable energy by 32%. Loans to the selected companies attributable to fossil fuels also decreased, but by a lesser 15%. Figure 42 shows that loans to the selected companies attributable to renewable energy reached a high point of over US\$ 3 billion in 2005. These have since not risen above US\$ 750 million, fluctuating between US\$ 300 and US\$ 400 million. Loans to the selected companies attributable to fossil fuels on the other hand, peaked at over US\$ 7 billion in 2006. They have since declined, fluctuating between US\$ 2 and US\$ 4 billion.

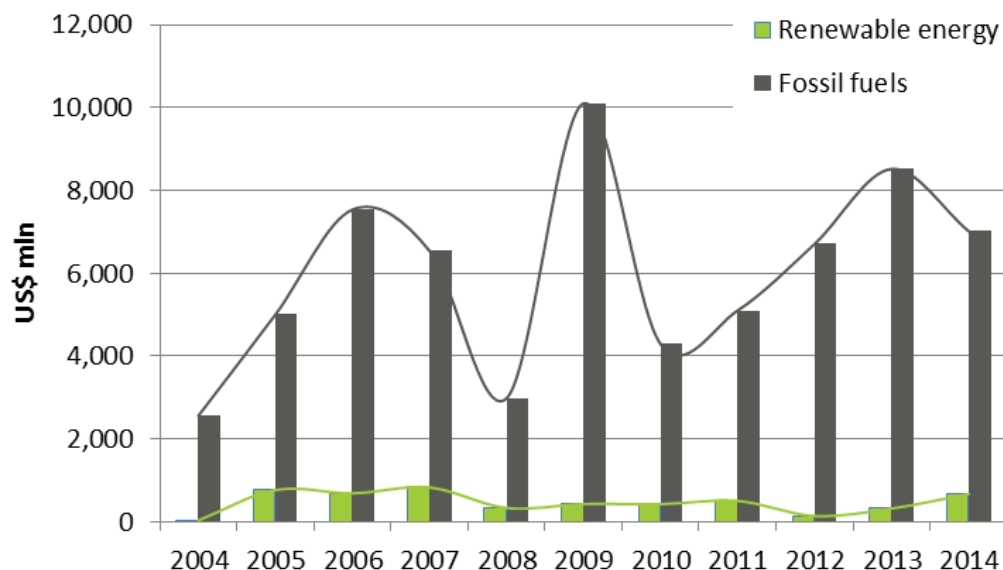
Figure 99 Deutsche Bank loans to the selected companies (2004-2014)



- **Underwriting**

In the second half of the period of study Deutsche Bank decreased its underwriting to renewable energy by 27%. During the same period Deutsche Bank increased its underwriting to fossil fuels by 24%. Figure 43 shows that underwriting to renewable energy has been consistently low. It has fluctuated between approximately US\$ 300 million and US\$ 400 million, showing a slight increase again in 2014. Underwriting to fossil fuels, on the other hand, has generally been over US\$ 4 billion, with an upward trend since 2010.

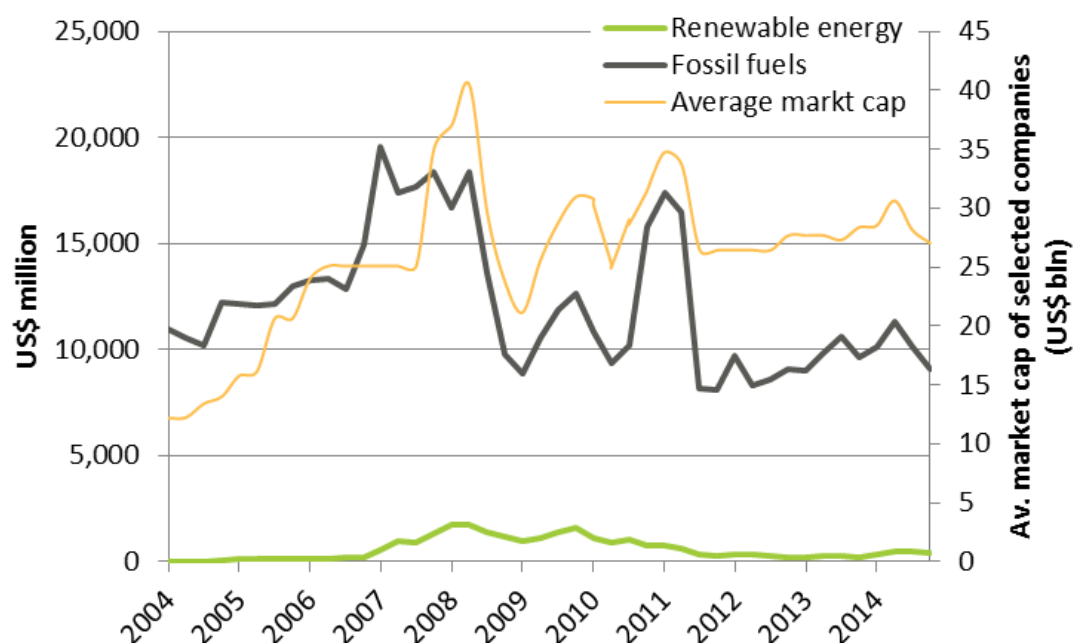
Figure 100 Deutsche Bank underwriting services to the selected companies (2004-2014)



- **Shareholdings**

Deutsche Bank's average annual shareholdings attributable to renewable energy decreased by 18% in the second half of the period of study. Average annual investments in selected companies attributable to fossil fuels decreased by 20%. Figure 44 shows that Deutsche Bank's investments in selected companies attributable to fossil fuels have generally followed the trends in fluctuations of the average market capitalization of the selected companies. Average annual investments in selected companies attributable to fossil fuels have generally been over US\$ 10 billion while average annual investments in selected companies attributable to renewable energy only rose over US\$ 1 billion in between 2007 and 2010. They have since declined to under US\$ 500 million.

Figure 101 Deutsche Bank shareholdings in selected companies 2004-2014



5.3.5 F. van Lanschot Bankiers

This section provides an analysis of the financing provided by F. Van Lanschot Bankiers to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In March 2014, Van Lanschot stated that it expects companies to reduce their greenhouse gas emissions: “Additionally, Van Lanschot expects its clients receiving credit to use as little water as possible, prevent water pollution, and reduce the emission of harmful particulates and greenhouse gas (both in absolute and relative terms).”¹⁰⁴

In October 2014, Van Lanschot, and its subsidiary Kempen, signed the Global Investor Statement on Climate Change of the Institutional Investors Group on Climate Change. “This statement is a UNPRI initiative, and emphasizes that as financial institutions Kempen and Van Lanschot want to make a positive contribution to mitigating climate change.”¹⁰⁵

• Loans and underwriting

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

104 Van Lanschot (2014, March), *Details van het verantwoord kredietbeleid*, online: <https://corporate.vanlanschot.nl/media/1395/van-lanschot-vo-kredietbeleid-7-maart-2014.pdf>, viewed in August 2015, p. 5.

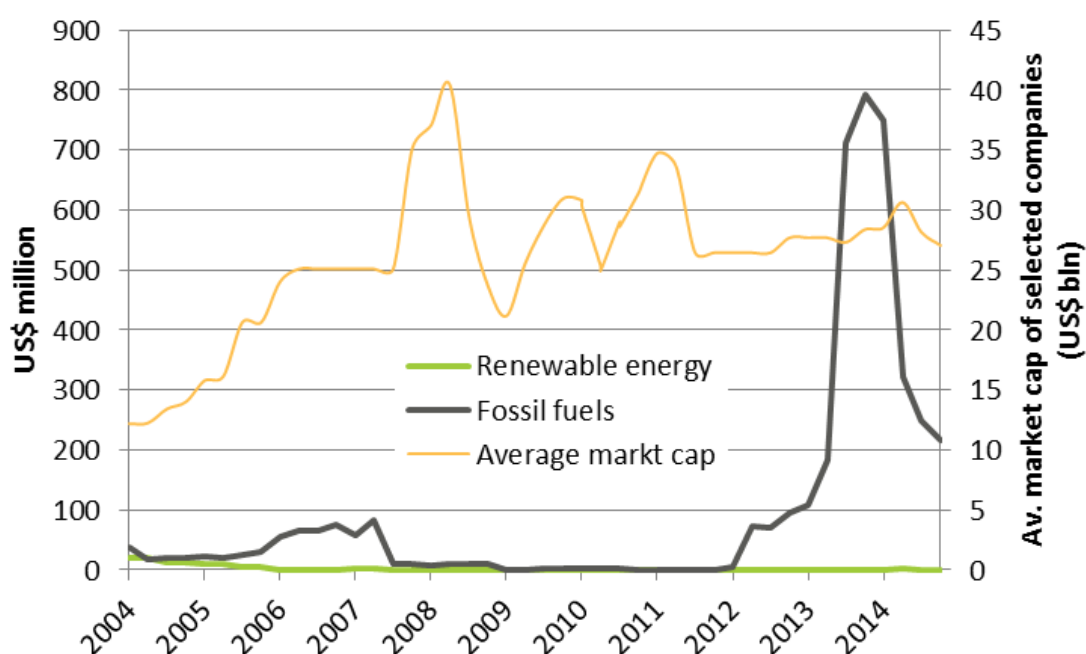
105 Van Lanschot (2014, 30 October), “Van Lanschot oogst waardering voor haar klimaatbeleid”, online: <https://corporate.vanlanschot.nl/nl/nieuws/nieuwsberichten/van-lanschot-oogst-waardering-voor-haar-klimaatbeleid>, viewed in August 2015.

- **Shareholdings**

In terms of the average annual investments in selected companies attributable to renewable energy, Van Lanschot decreased its investments by 91% in the second half of the period of study. In the first half the period of study, investments in selected companies attributable to renewable energy averaged around US\$ 4 million per year. In the second half of the period of study, this fell to less than US\$ 0.5 million.

Shareholdings of the selected companies attributable to fossil fuels, on the other hand, increased by 446%. Average annual shareholdings rose from approximately US\$ 27 million to US\$ 149 million. The proportion of total average investments in selected companies attributable to renewable energy decreased by 11%. The proportion of average total annual investments attributable to fossil fuels increased by 18%. Figure 102 presents a more detailed picture of the developments. Let's hope that the commitments made by Van Lanschot and its subsidiary Kempen in 2014 will have a marked effect on its investments in selected companies attributable to renewable energy in the future, because currently the levels are disappointingly low.

Figure 102 F. Van Lanschot Bankiers shareholdings in selected companies 2004-2014



5.3.6 ING Group

This section provides description of the financing provided by the ING Group to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In September 2009, ING Group subscribed to the investor statement of the Corporate Climate Communique, similar to Barclays (see section 4.3.5) and the Bank of America (see section 4.3.2).¹⁰⁶ It has since endorsed every Corporate Climate Communique since 2009, most recently the 2014 Trillion Tonne Communique.¹⁰⁷

Table 45 shows that ING Group increased its loans and underwriting services attributable to renewable energy by 12% from the first half the period of study to the second. This minor increase stands in stark contrast to its 67% increase in loans and underwriting to the selected companies attributable to fossil fuels. While ING has endorsed every Corporate Climate Communique since 2009 it has also increased its financing to fossil fuels precisely in the period after this endorsement. As a proportion of its total loans and underwriting, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects decreased by 3% while loans and underwriting to the selected companies attributable to fossil fuels increased by 4%.

Table 45 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	12%	-3%
Fossil fuels	67%	4%

- **Loans**

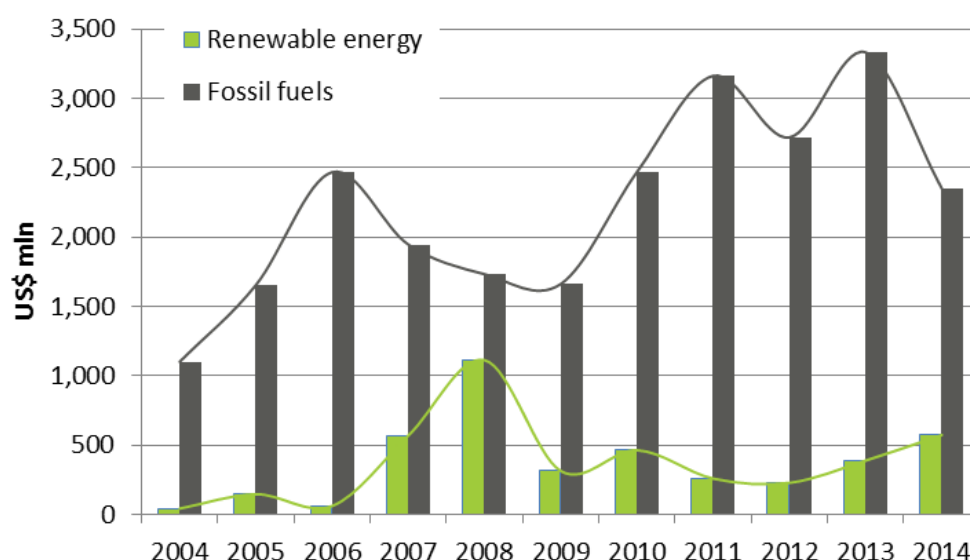
ING's loans to the selected companies attributable to fossil fuels increased by 53% from the first half of the period of study to the second. Loans to the selected companies attributable to renewable energy actually decreased by 1%.

Figure 51 provides a detailed overview of ING Group's loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Loans to the selected companies attributable to fossil fuels declined slightly during the global economic recession, but increased rapidly thereafter. Loans to the selected companies attributable to renewable energy increased in the years preceding the economic crisis, declining at the height of the crisis. Loans to the selected companies attributable to renewable energy fluctuated between 2009 and 2014, showing a gradual upward trend from 2012 to 2014.

106 Copenhagen Communique (2009). *Signatories to the Copenhagen Communique – 2009*, online: <http://www.climatecommuniques.com/About/Copenhagen.aspx>, viewed in August 2015.

107 ING Group (n.d.), "Cap carbon at 1 trillion tonnes", online: <http://www.ing.com/ING-in-Society/Sustainability/Sustainability-news/Snws-1/Cap-carbon-at-1-trillion-tonnes.htm>, viewed in September 2015.

Figure 103 **ING Group loans to the selected companies (2004-2014)**



- **Underwriting**

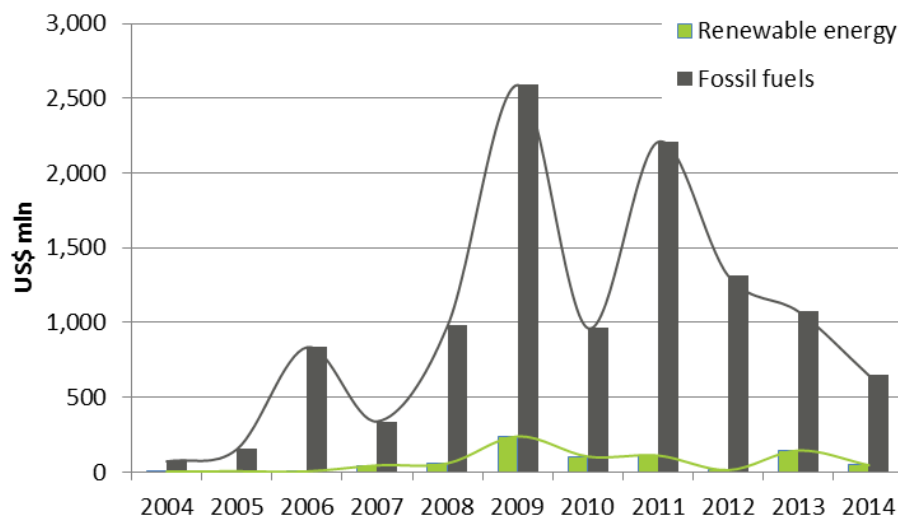
In the second half of the period of study, ING's underwriting services to renewable energy increased by 126%. This achievement is somewhat undermined by the fact that its underwriting services to the selected companies attributable to fossil fuels increased by 104%, and the overall increase in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects only increased by 12%.

Figure 52 provides an overview of the annual changes in underwriting services attributable to renewable energy and fossil fuels. Throughout the period of study underwriting services to renewable energy have been minimal, never exceeding US\$ 250 million. Underwriting services to the selected companies attributable to fossil fuels increased in to the highest levels in 2009, showing a gradual fluctuating decline thereafter, though not reaching below US\$ 500 million.

Is ING Group finally decreasing its support for fossil fuels after endorsing every Corporate Climate Communique since 2009, and most recently the 2014 Trillion Tonne Communique?¹⁰⁸ If so, why is it not making more of an effort to increase its support of renewable energy?

¹⁰⁸ ING Group (n.d.), "Cap carbon at 1 trillion tonnes", online: <http://www.ing.com/ING-in-Society/Sustainability/Sustainability-news/Snws-1/Cap-carbon-at-1-trillion-tonne-s.htm>, viewed in September 2015.

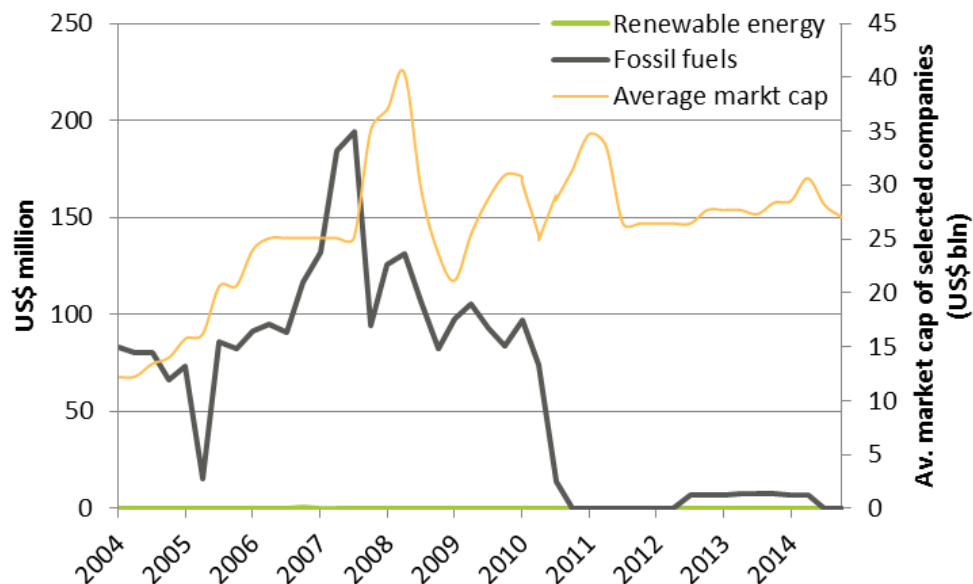
Figure 104 ING Group underwriting services to the selected companies (2004-2014)



- Shareholdings**

ING Group reduced its stake in NN Group to below 50% in May 2015. That is why Figure 53 shows a sharp decline in investments as NN Group is no longer considered a subsidiary of ING Group.

Figure 105 ING Group shareholdings in selected companies 2004-2014



5.3.7 KBC Group

This section provides description of the financing provided by the KBC Group to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Table 46 shows that KBC Group increased its total loans and underwriting services to renewable energy by 5% in the second half of the period of study. At the same time, it decreased its total loans and underwriting to the selected companies attributable to fossil fuels by 25%. The proportion of total loans and underwriting attributable to renewable energy increased by 1%, and the proportion attributable to fossil fuels decreased by 16%. These measures indicate a strong commitment to supporting renewable energy and decreasing support for fossil fuels.

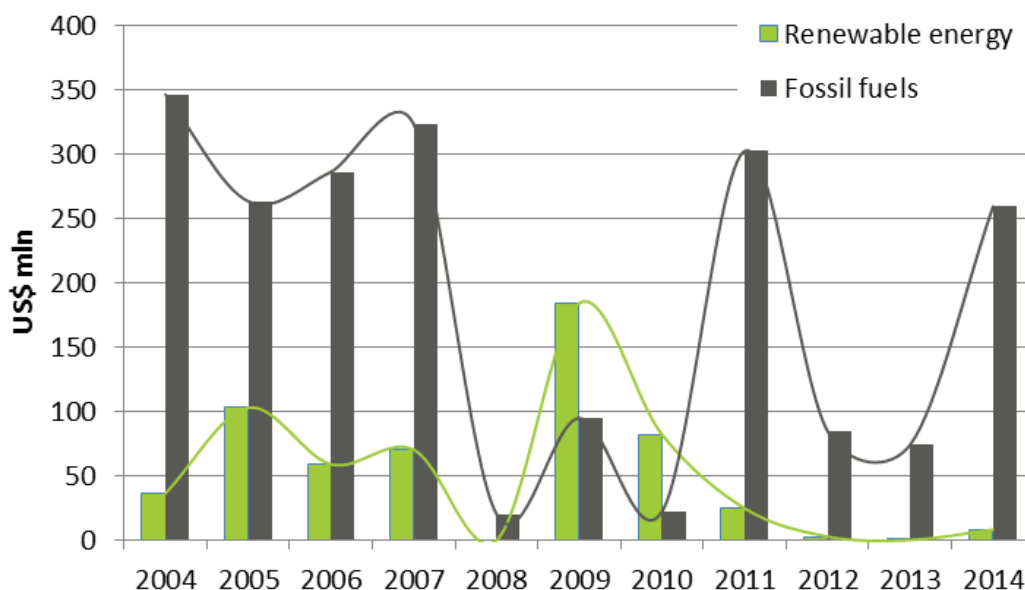
Table 46 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	5%	1%
Fossil fuels	-25%	-16%

- Loans**

KBC Group provided 42% less loans to the selected companies attributable to renewable energy in the second half of the period of study. Loans to the selected companies attributable to fossil fuels decreased by 39%. Figure 106 shows that loans to the selected companies attributable to fossil fuels have been over US\$ 250 million for six years in the period 2004-2014. Loans to the selected companies attributable to renewable energy have generally not exceeded US\$ 100 million. There was a significant dip in loans to the selected companies attributable to fossil fuels during the economic crisis, while loans to the selected companies attributable to renewable energy were higher. Loans to the selected companies attributable to renewable energy have been low and declining since 2011.

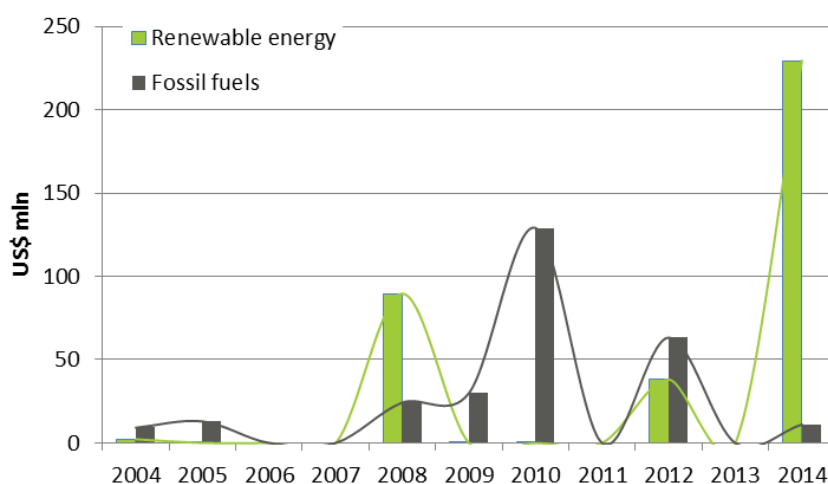
Figure 106 KBC Group loans to the selected companies (2004-2014)



- **Underwriting**

Underwriting to renewable energy increased by 191% in the second half of the period of study. Underwriting to fossil fuels, on the other hand, increased by 256%. Figure 107 shows that underwriting services to renewable energy reach a high of approximately US\$ 230 million in 2014. Underwriting to fossil fuels increased in the economic crisis, in line with the general global trend, and have declined since.

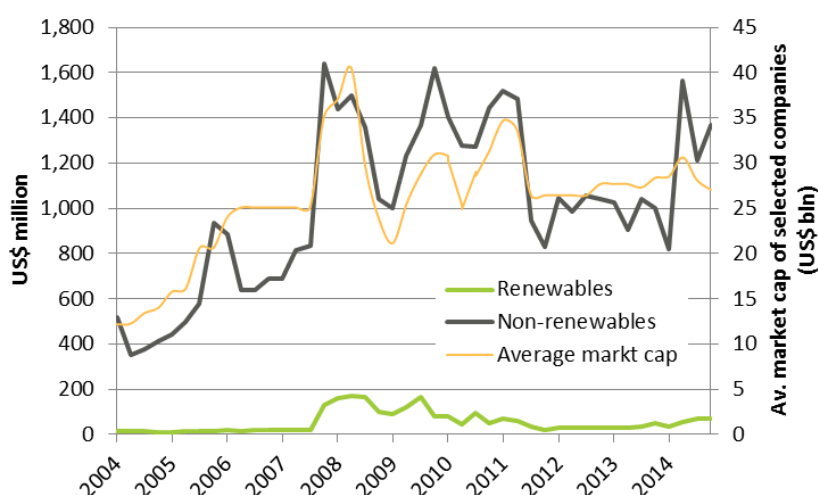
Figure 107 KBC Group underwriting services to the selected companies (2004-2014)



- **Shareholdings**

Average annual investments attributable to renewable energy decreased by 14% in the second half of the period of study. During the same period, investments in selected companies attributable to fossil fuels increased by 33%. Figure 108 shows that investments in selected companies attributable to fossil fuels have followed the fluctuations in the average market capitalization of the selected companies. These investments have generally been over US\$ 800 million since 2007. Investments in selected companies attributable to renewable energy have hardly exceeded US\$ 100 million, generally fluctuating between US\$ 30 million and US\$ 70 million.

Figure 108 KBC Group shareholdings in selected companies 2004-2014



5.3.8 Triodos Bank

This section provides an analysis of the financing provided by Triodos Bank to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Regarding energy and climate change Triodos says, “For a transition from a carbon-based economy to a sustainable economy, it's essential to reduce energy demand, to use energy as efficiently as possible, and to invest massively in renewable energy systems, while switching to low carbon fuels.”¹⁰⁹

Triodos Investment Management signed the 2009 Investor Statement on the Urgent Need for a Global Agreement on Climate Change of the Global Investor Coalition on Climate Change.

¹¹⁰

Table 47 shows that Triodos Bank provided 166% more loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects in the second half of the period of study than the first. Triodos Bank did not provide any loans or underwriting to fossil fuels. 100% of all Triodos Bank loans and underwriting services to the selected companies are attributable to renewable energy.

Table 47 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	166%	0%

¹⁰⁹ Triodos Bank (n.d.), “03 Energy & Climate”, online: <https://www.triodos.com/en/about-triodos-bank/what-we-do/our-expertise-overview/energy-climate/>, viewed in September 2015.

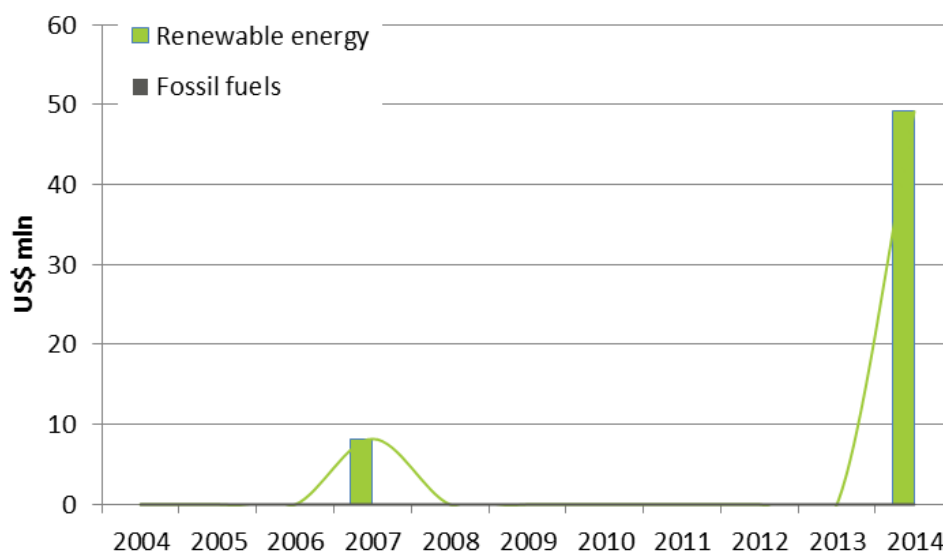
¹¹⁰ Global Investor Coalition on Climate Change (2009), *2009 Investor Statement on the Urgent Need for a Global Agreement*, online: <http://1gkvgy43ybi53fr04g4elpcdhfr.wpengine.netdna-cdn.com/wp-content/uploads/2012/11/2009-Investm-or-Statement-on-a-Global-Agreement-FINAL.pdf>, viewed in August 2015, p. 11.

Energy source	Percent change	Proportion change
Fossil fuels	n/a	n/a

- **Loans**

Triodos Bank provided 499% more loans to the selected companies attributable to renewable energy in the second half of the period of study. Figure 109 shows that this is mainly due to loans provided in 2014. Triodos Bank is likely to be providing more bilateral loans throughout the period, explaining the lack of data for a number of years. Of course, other financial institutions also provide bilateral loans. However, the impacts may be more pronounced for Triodos.

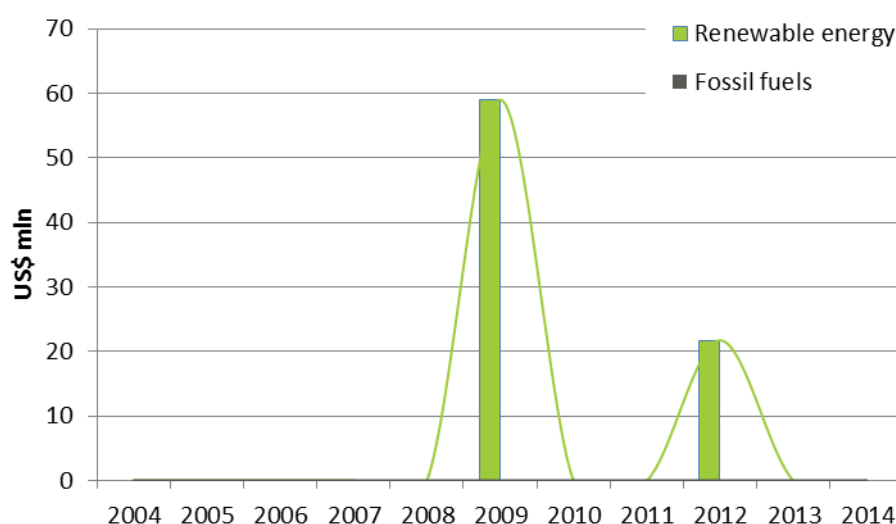
Figure 109 Triodos loans to the selected companies (2004-2014)



- **Underwriting**

Triodos Bank provided 74% more underwriting services to renewable energy in the second half of the period of study and in the first. Figure 110 shows that this is mainly due to underwriting services provided in the second half of 2009 and 2012.

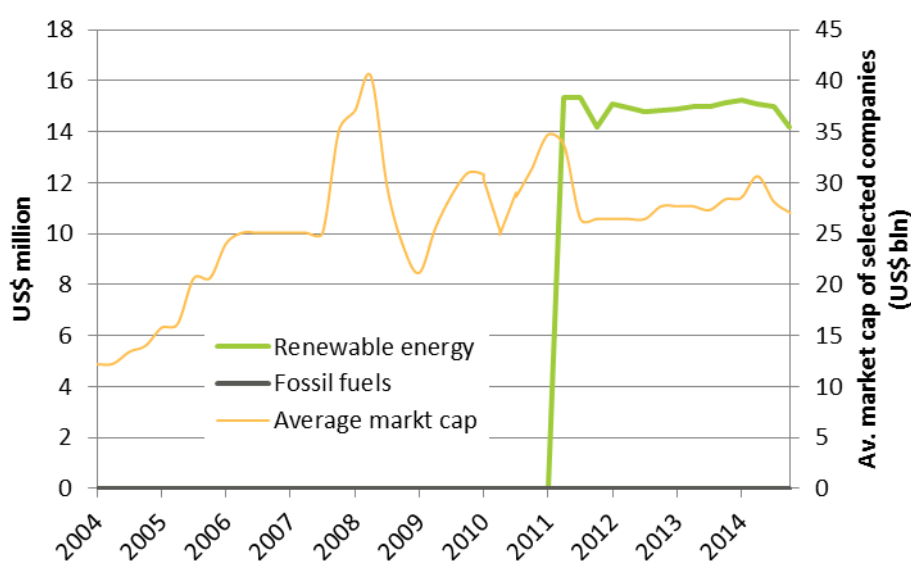
Figure 110 Triodos underwriting services to the selected companies (2004-2014)



• Shareholdings

Many Triodos funds are managed by a third party (Delta Lloyd Asset Management, see section 10.3.4). As such, the research into Triodos' shareholdings was done from the fund level rather than from the company level. The fund level data was less complete. It only contained information on investments in the selected companies as of 2011. Figure 111 shows that Triodos has only invested in selected companies attributable to renewable energy and renewable energy projects. Renewable energy investments account for 96% of Triodos' investments in all selected companies. Other sources of energy not included in the scope of this study's definition of renewable energy account for the remaining 4%.

Figure 111 Triodos shareholdings in selected companies 2004-2014



5.3.9 VDK Spaarbank

This section provides an analysis of the financing provided by VDK Spaarbank to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

- **Loans**

This research did not identify any loans provided by VDK Spaarbank to the selected companies.

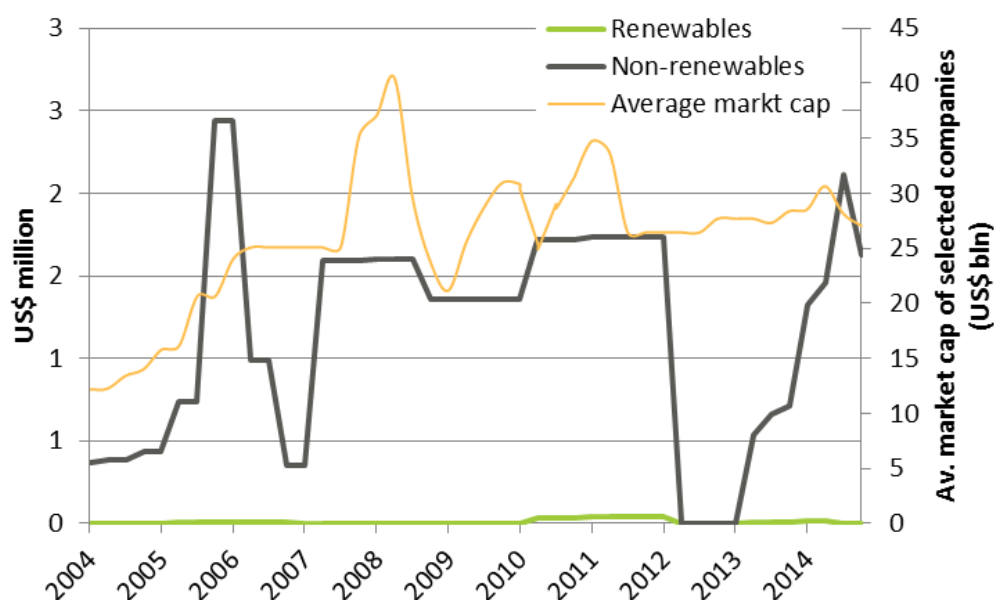
- **Underwriting**

This research did not identify any underwriting services provided by VDK Spaarbank to the selected companies.

- **Shareholdings**

VDK Spaarbank did not directly manage investments in selected companies. One mutual fund, Accent Pension Fund, is owned by VDK Spaarbank and managed by a third party. This fund increased its average annual investments in selected companies attributable to renewable energy by 1,126%. In absolute terms the increase was by approximately US\$ 20,000. Average annual investments attributable to fossil fuels increased by 10%, from US\$ 1.1 million to US\$ 1.2 million. Investments attributable to fossil fuels have been consistently higher than renewable energy.

Figure 112 VDK shareholdings in selected companies 2004-2014

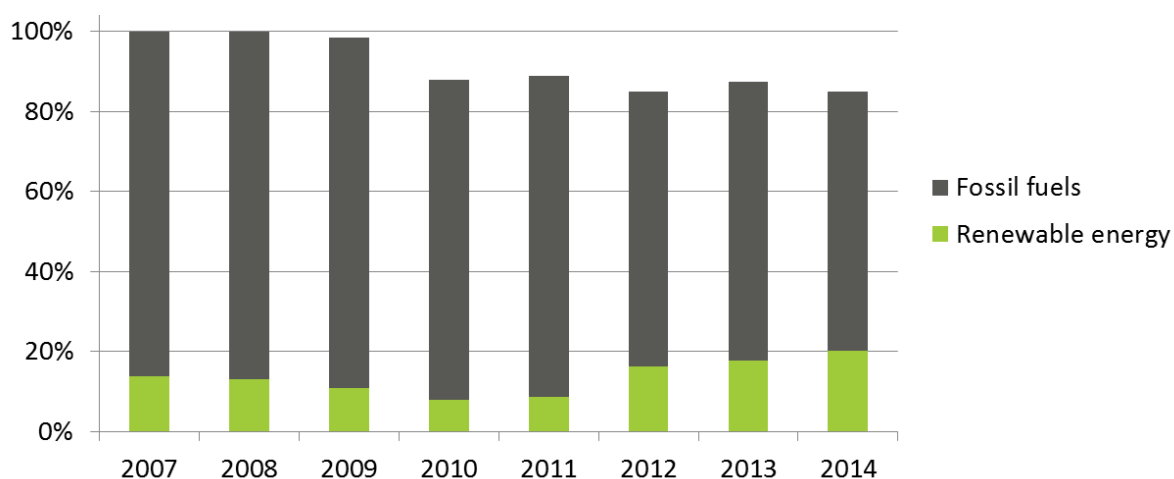


Chapter 6 Denmark

This chapter outlines the trends in financing of the seven selected financial institutions active in Denmark towards the selected companies attributable to fossil fuels (coal mining and oil & gas), renewable energy input equipment manufacturers (solar panels, concentrated solar power plants, wind turbine manufacturers, and geothermal power turbine and engineering companies), renewable energy projects, and utility companies, over the period 2004-2014.

Figure 113 shows the portfolio composition of the selected utility companies active in Denmark. It shows that there have been fluctuations in the proportion of renewable energy. However, since 2011 the proportion of renewable energy seems to be increasing, while the proportion of fossil fuels seems to be decreasing, albeit at a slower pace.

Figure 113 Annual portfolio proportions of researched utility companies active in Denmark



6.1 Loans and underwriting

This section provides an analysis of the loans and underwriting provided by financial institutions active in Denmark to the selected companies and renewable energy projects. Section 6.1.1 provides an outline of the annual changes in the financing to the selected companies. Section 6.1.2 ranks the financial institutions active in Denmark according to their financing of fossil fuels.

6.1.1 Annual analysis

Figure 114 shows that loans to both renewable energy and fossil fuels fluctuated throughout the period of study. Loans to the selected companies attributable to fossil fuels peaked in 2010, and have shown a general decline since then. Loans to the selected companies attributable to renewable energy seem to be on an upward trend since 2008. There seems to be a gap in lending to renewable energy in 2013. In 2014, loans to the selected companies attributable to renewable energy reached US\$ 400 million. This level is nearing the levels of Loans to the selected companies attributable to fossil fuels.

Figure 114 Annual loans provided by financial institutions active in Denmark to the selected companies

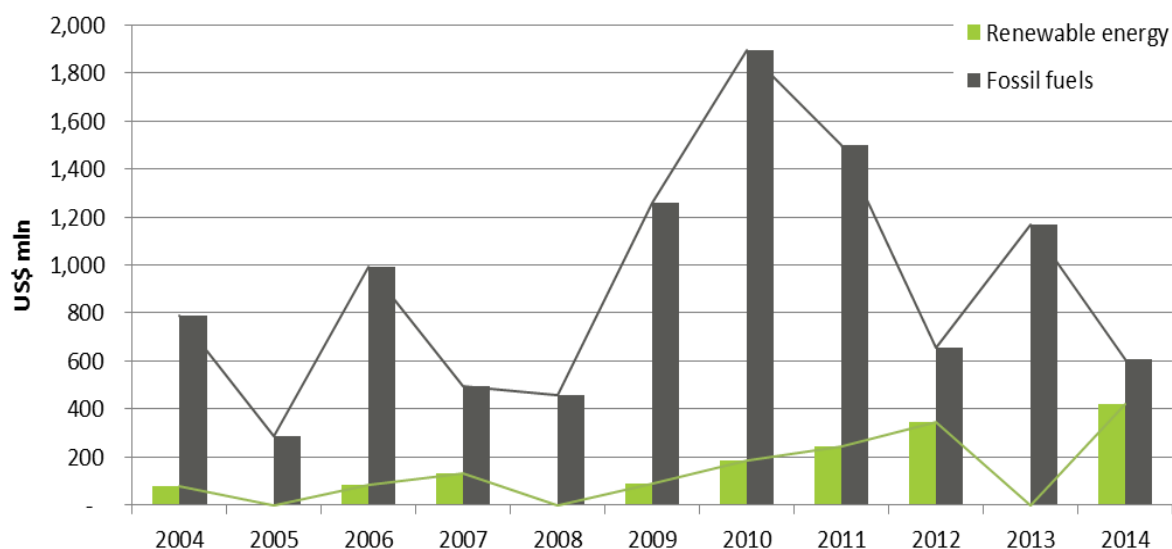
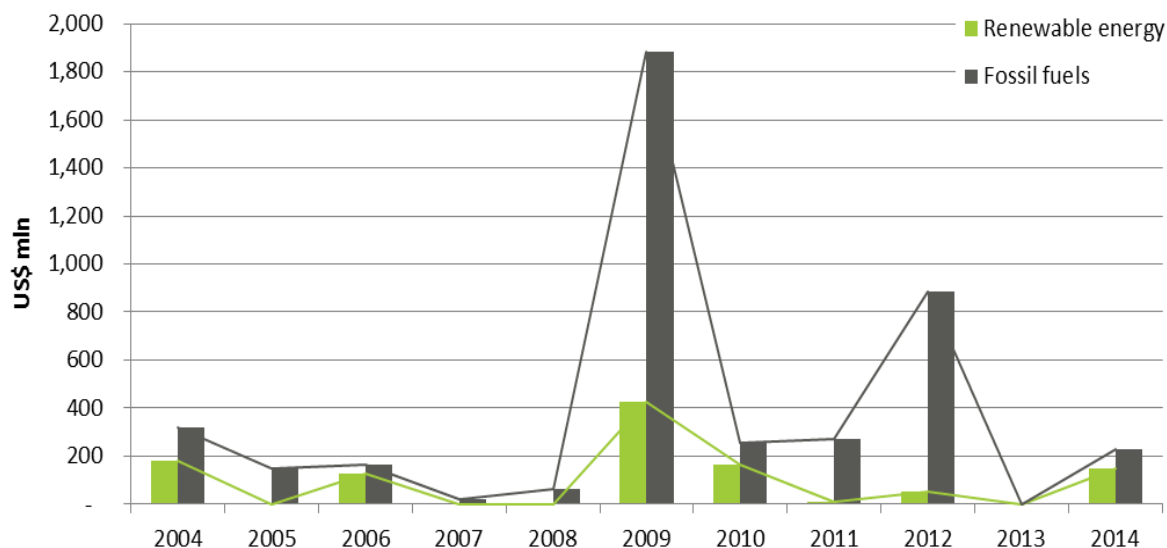


Figure 115 shows that the levels of underwriting to renewable energy were slightly lower than the levels of underwriting for fossil fuels. There were exceptions in 2009, 2011, and 2012 where the levels of underwriting for fossil fuels were significantly higher.

Figure 115 Annual underwriting services provided by financial institutions active in Denmark to the selected companies



6.1.2 Rankings

This section provides a ranking of the financial institutions active in Denmark in terms of the value of their loans and underwriting services to the selected companies attributable to fossil fuels. Figure 116 shows the ranking of the top financiers of the selected companies attributable to fossil fuels for the period 2009 to 2014. Zooming in on the most recent five years provides a more current picture of the financial activities of the selected financial institutions with regard to their financing of the selected companies attributable to fossil fuels and renewable energy. Nordea dominates the first position. In the period 2009 to 2014, it provided approximately US\$ 8 billion to the selected companies attributable to fossil fuels. In the same period it provided approximately US\$ 2 billion in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects.

Figure 116 shows that this difference in financing to fossil fuels and renewable energy is common to the other financial institutions active in Denmark. Danske Bank provided hardly any loans and underwriting services to the selected companies attributable to renewable energy and renewable energy projects.

Figure 116 Ranking of the top financiers of the selected companies attributable to fossil fuels (loans & underwriting, US\$ mln, 2009-2014)

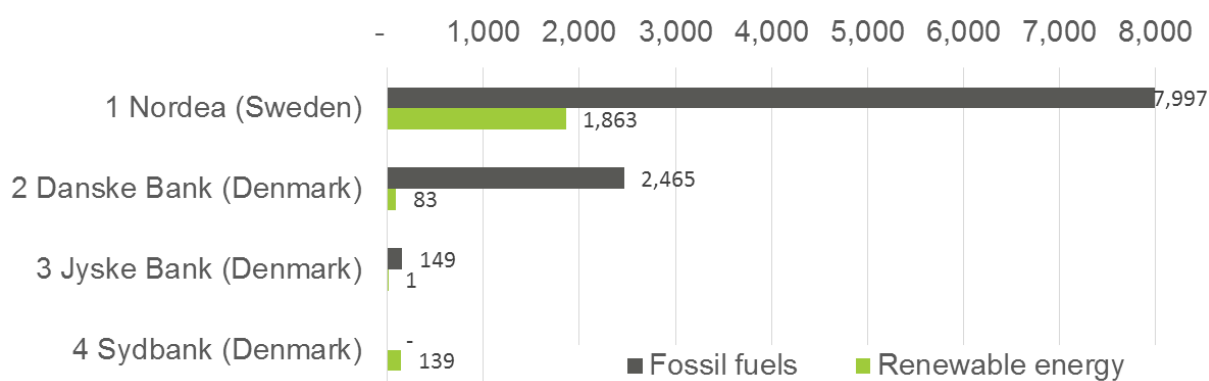


Table 48 provides an overview of the loans and underwriting to the selected companies attributable to fossil fuels and renewable energy. It shows that for three of the financial institutions active in Denmark the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels was higher than 80%. For two this proportion was over 95%. This indicates the huge disparity between the financing of renewable energy and fossil fuels. No loans and underwriting to the selected companies attributable to fossil fuels were identified for Sydbank.

Table 48 also shows the percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Only one of the researched financial institutions active in Denmark decreased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). However, this decrease was very small. The remaining financial institutions did not change the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014).

Table 48 Overview of loans and underwriting to the selected companies attributable to fossil fuels and renewable energy, and renewable energy projects (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Nordea	Sweden	7,997	1,863	81%	-2%
Danske Bank	Denmark	2,465	83	97%	0%
Jyske Bank	Denmark	149	1	99%	0%
Sydbank	Denmark	-	139	0%	0%
Total		10,611	2,085	84%	-2%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

6.2 Shareholdings

This section provides an analysis of the investments in shareholdings by financial institutions active in Denmark in the selected companies. Section 6.2.1 provides an outline of the annual changes in the investments in selected companies. Section 6.2.2 ranks the financial institutions active in Denmark according to their investments in selected companies attributable to fossil fuels.

6.2.1 Annual analysis

Figure 117 shows that the average investments in selected companies, attributable to fossil fuels, generally fluctuated with the trends in the average market capitalization of the selected companies. However, since the end of 2013 there has been a steeper decline in investments in selected companies attributable to fossil fuels.

Investments in selected companies attributable to renewable energy peaked in 2007, gradually declining until 2012. From 2012 there has been a gradual increase in investment in renewable energy. Though the huge difference in investments in selected companies attributable to renewable energy and fossil fuels should be noted.

Figure 117 Annual investments by financial institutions active in Denmark in selected companies

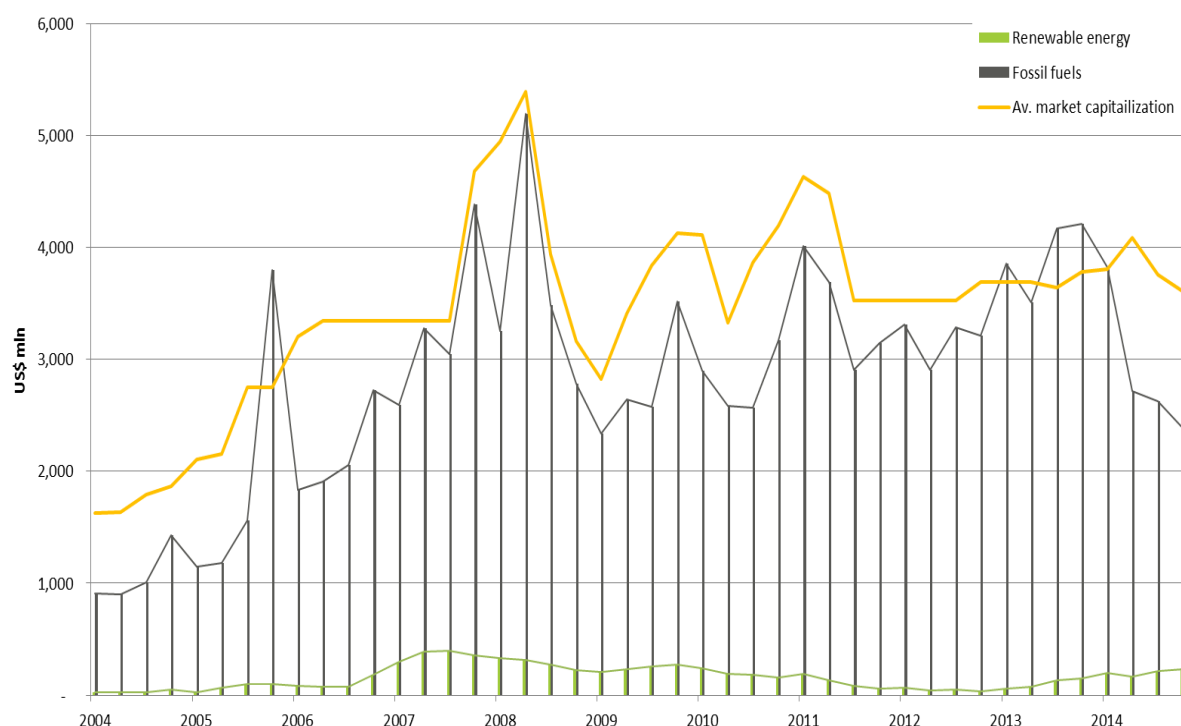


Table 49 highlights the difference in investments to renewable energy and fossil fuels.

Table 49 Average annual investments in selected companies attributable to renewable energy (US\$ mln)

Year	Renewable energy	Fossil fuels
2004	32	1,060
2005	74	1,923
2006	104	2,130
2007	361	3,327
2008	286	3,678
2009	245	2,769
2010	191	2,806
2011	117	3,437
2012	48	3,179
2013	104	3,936
2014	205	2,887

Table 50 shows that on average the financial institutions active in Denmark invested 4% of their investments in selected companies in renewable energy and 65% in fossil fuels.

Table 50 Average annual % investment in renewable energy

Year	Renewable energy	Fossil fuels
2004	2%	54%
2005	0%	13%
2006	2%	31%
2007	7%	67%
2008	6%	74%
2009	7%	74%
2010	5%	72%
2011	3%	78%
2012	1%	82%
2013	2%	84%
2014	6%	83%
Average	4%	65%

6.2.2 Rankings

This section provides a ranking of the financial institutions active in Denmark in terms of the value of their investments attributable to fossil fuels. Figure 118 provides a ranking of the top financial institutions active in Denmark on the basis of their average annual investments in the selected companies attributable to fossil fuels in the period 2009-2014. Nordea, Danske Bank and Jyske Bank occupy the top three positions with the highest average annual investments in selected companies attributable to fossil fuels. Nordea invested on average more than US\$ 2.5 billion in fossil fuels annually in the period 2009-2014. Danske Bank had average annual investments in selected companies attributable to fossil fuels of over US\$ 490 million.

Figure 118 also shows the large gap between average annual investments in selected companies attributable to fossil fuels and renewable energy. None of the financial institutions had average annual investments in selected companies attributable to renewable energy of over US\$ 80 million. The third largest investor in fossil fuels, Jyske Bank, only had an annual investment in renewable energy of US\$ 4 million in the period 2009-2014.

Figure 118 Ranking of the top average annual investors in the selected companies attributable to fossil fuels (US\$ mln, 2009-2014)

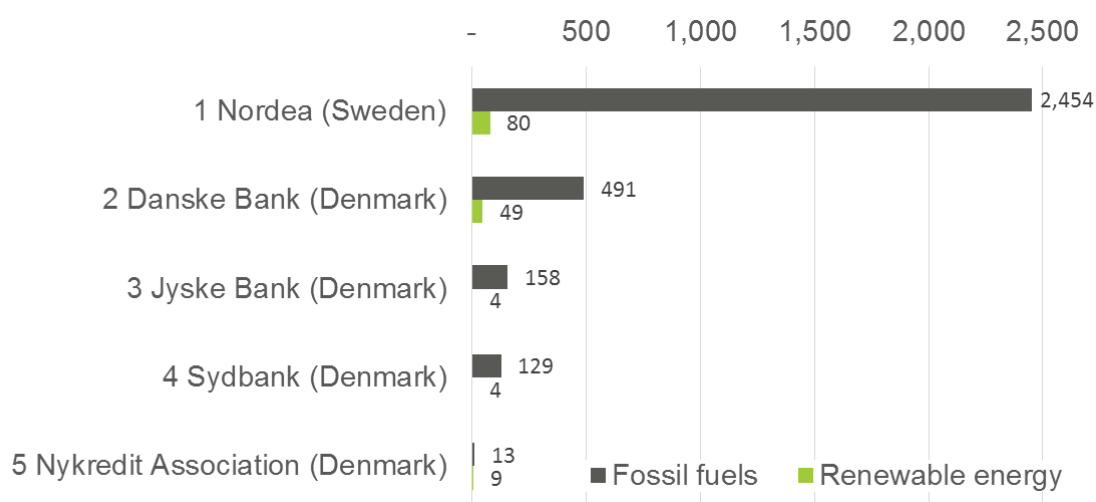


Table 51 provides an overview of the investments in the selected companies attributable to fossil fuels and renewable energy. It shows that for four of the five financial institutions the proportion of fossil fuels in the investments in the selected companies attributable to renewable energy and fossil fuels was higher than 90%. For three this proportion was over 95%. This indicates the huge disparity between the financing of renewable energy and fossil fuels. Only Nykredit Association had a generally even spread of investments in the selected companies attributable to renewable energy and fossil fuels.

Table 51 also shows the change in the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in the investments in the selected companies attributable to renewable energy and fossil fuels. Four of the five financial institutions actually increased the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). Nykredit Association had the highest proportion increase of 23 percentage points.

Table 51 Overview of shareholdings in the selected companies attributable to fossil fuels and renewable energy (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Nordea	Sweden	2,454	80	97%	2%
Danske Bank	Denmark	491	49	91%	6%
Jyske Bank	Denmark	158	4	98%	0%
Sydbank	Denmark	129	4	97%	1%
Nykredit Association	Denmark	13	9	61%	23%
Total		3,245	145	96%	2%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

6.3 Financial institution analysis

This section provides an analysis of the changes in values of loans, underwriting services and investments in shares in selected companies that can be attributed to renewable energy and fossil fuels individually for the financial institutions active in Denmark. The sub-sections are ordered alphabetically by bank name.

6.3.1 Arbejdernes Landsbank

This research did not identify any financial relationships between Arbejdernes Landsbank and the selected companies. This indicates that Arbejdernes Landsbank did not participate in syndicated loans and underwriting to the selected companies, and did not invest in their shares. It is possible that Arbejdernes Landsbank did provide bilateral that cannot be identified on the basis of publicly available resources.

6.3.2 Danske Bank

This section provides an analysis of the financing provided by Danske Bank to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In 2008, Danske Bank stated that “the Group considers climate change our key environmental issue and has therefore developed a climate change strategy for the years ahead. The strategy focuses on our ability to confront the climate challenge in our financial business and operations and through dialogue with stakeholders.” [...] “We believe that the financial services sector plays a vital role in providing the financial infrastructure to support a low-carbon economy.”¹¹¹

Also in 2010 and 2015, Danske Bank subscribed to the Global Investor Statement on Climate Change. Since 2015, Danske Bank is also a member of the Institutional Investors Group on Climate Change (IIGCC).¹¹²

Table 52 shows that Danske Bank increased its total loans and underwriting to the selected companies attributable to renewable energy by 103% in the second half of the period of study. Loans and underwriting to the selected companies attributable to fossil fuels increased by 63%. As a proportion of total loans and underwriting, the proportion attributable to renewable energy did not change. The proportion of total loans and underwriting attributable to fossil fuels decreased by 1%.

Table 52 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
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111 Danske Bank (2009, February), *Corporate Responsibility 2008*.

112 Institutional Investors Group on Climate Change (2014, September), *Global Investor Statement on Climate Change*.

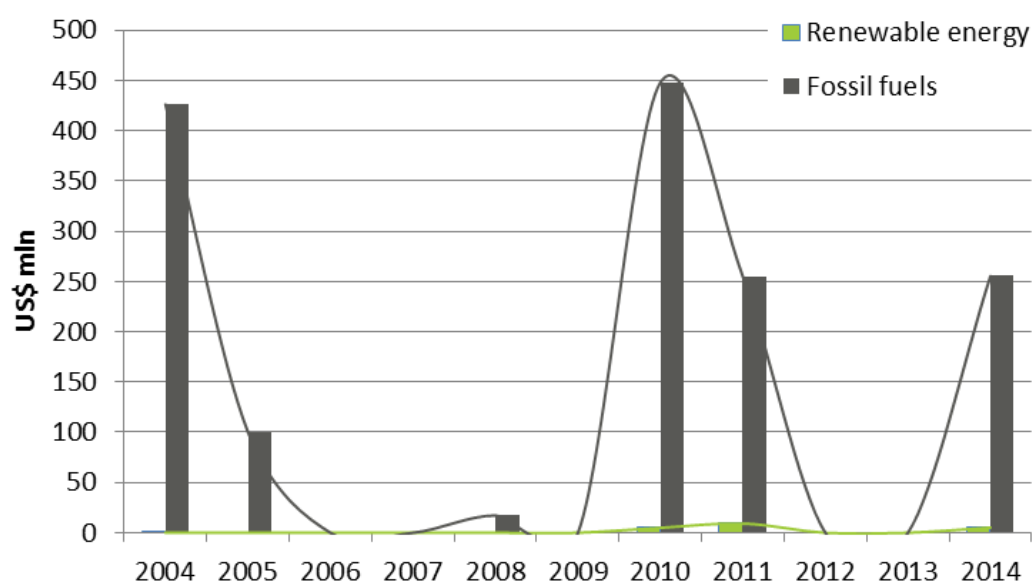
Energy source	Percent change	Proportion change
Renewable energy	103%	0%
Fossil fuels	63%	-1%

- **Loans**

Danske Bank's loans to the selected companies attributable to renewable energy increased by 83,349%, from US\$ 0.02 million in the first half of the period of study to US\$ 19 million in the second half of the period of study. In the same period, loans to the selected companies attributable to fossil fuels increased by 76%.

Figure 119 shows that there were significant fluctuations in the Loans to the selected companies attributable to fossil fuels. When these were provided to the selected companies, they generally exceeded US\$ 250 million. Loans to the selected companies attributable to renewable energy reached a peak in 2011 at just under US\$ 10 million.

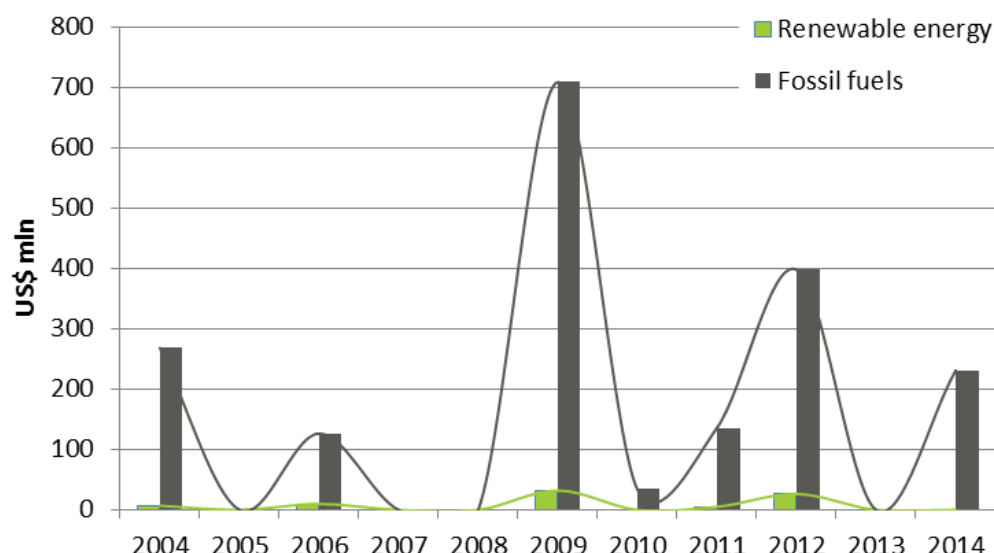
Figure 119 Danske Bank loans to the selected companies (2004-2014)



- **Underwriting**

Underwriting to renewable energy increased by 45%. Underwriting to fossil fuels increased by 54%. Figure 120 shows that there are again significant fluctuations in the underwriting to fossil fuels. However, underwriting to fossil fuels has consistently been higher than underwriting to renewable energy. Underwriting to renewable energy never exceed US\$ 33 million.

Figure 120 Danske Bank underwriting services to the selected companies (2004-2014)

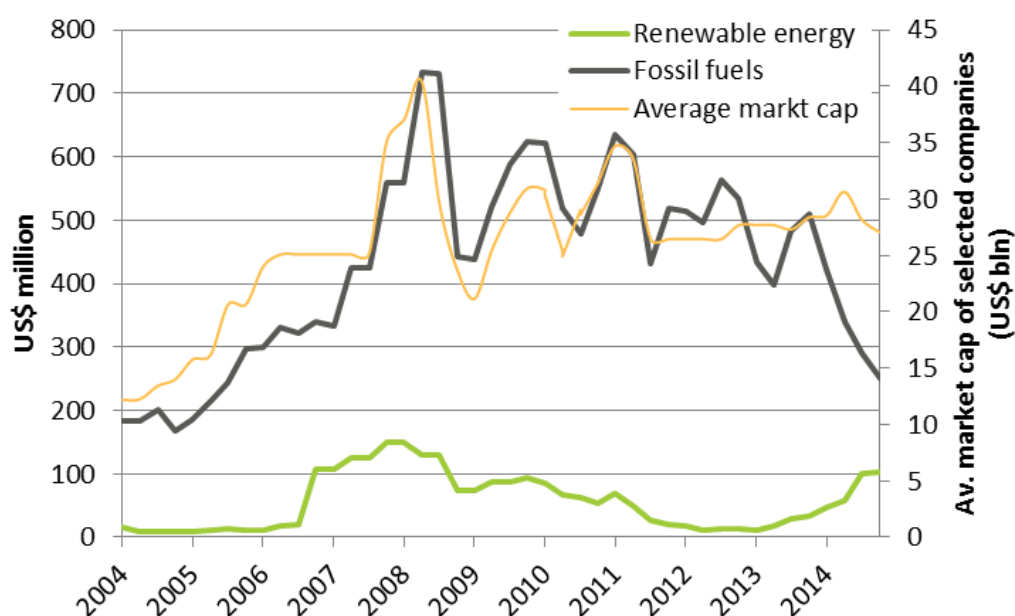


- **Shareholdings**

In the second half of the period of study, the average annual investments in selected companies attributable to renewable energy decreased by 27%. In the same period, average annual investments in selected companies attributable to fossil fuels increased by 26%. Figure 121 shows that Danske Bank's shareholdings attributable to fossil fuels followed the fluctuations in the average market capitalization. For most of the period of study, Danske Bank's average investments in selected companies attributable to fossil fuels were never below US\$ 400 million. Since the second quarter of 2013, there has been a decline in investments in selected companies attributable to fossil fuels.

Investments in selected companies attributable to renewable energy have also fluctuated. After a dip in 2012, Danske Bank's investments in selected companies attributable to renewable energy show an upward trend, exceeding US\$ 100 million.

Figure 121 Danske Bank shareholdings in selected companies 2004-2014



6.3.3 Jyske Bank Group

This section provides a description of the financing provided by Jyske Bank Group to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In 2014, Jyske Bank Group stated, “Jyske Bank follows the rules applying to social, ethical as well as climate and environmental issues and has not found it necessary to implement special policies in these areas.” It added that “Jyske Bank takes corporate social responsibility in connection with investments, meaning that environmental, social and governance (ESG) issues are included in the investment decisions.”¹¹³

Table 53 shows that, in the second half of the period of study, Jyske Bank Group decreased its total loans and underwriting to the selected companies attributable to renewable energy by 10%. At the same time, it increased its loans and underwriting to the selected companies attributable to fossil fuels. The proportions of total loans and underwriting attributable to either fossil fuels or renewable energy did not change.

Table 53 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

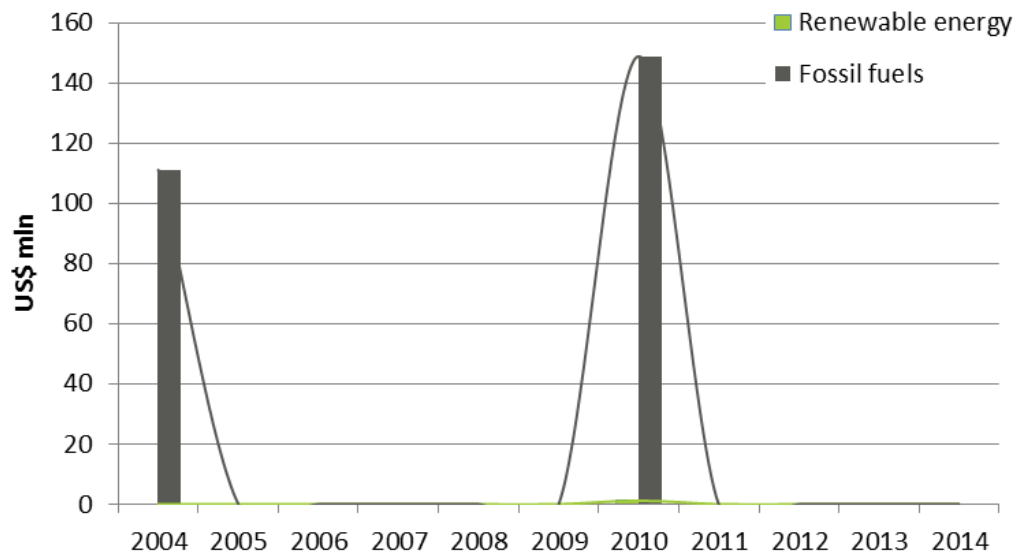
Energy source	Percent change	Proportion change
Renewable energy	-10%	0%
Fossil fuels	3%	0%

113 Jyske Bank Group (2015, February), *Report on Corporate Social Responsibility*.

- **Loans**

In the first half of the period of study, Jyske Bank did not provide any loans to the selected companies attributable to renewable energy and renewable energy projects. In 2010, Jyske Bank provided loans to the selected companies attributable to renewable energy of US\$ 1 million. As Figure 122 shows, loans to the selected companies attributable to fossil fuels were far higher. The research, however, did not identify many loans to the selected companies attributable to renewable energy or fossil fuels, or renewable energy projects, where Jyske Bank was involved.

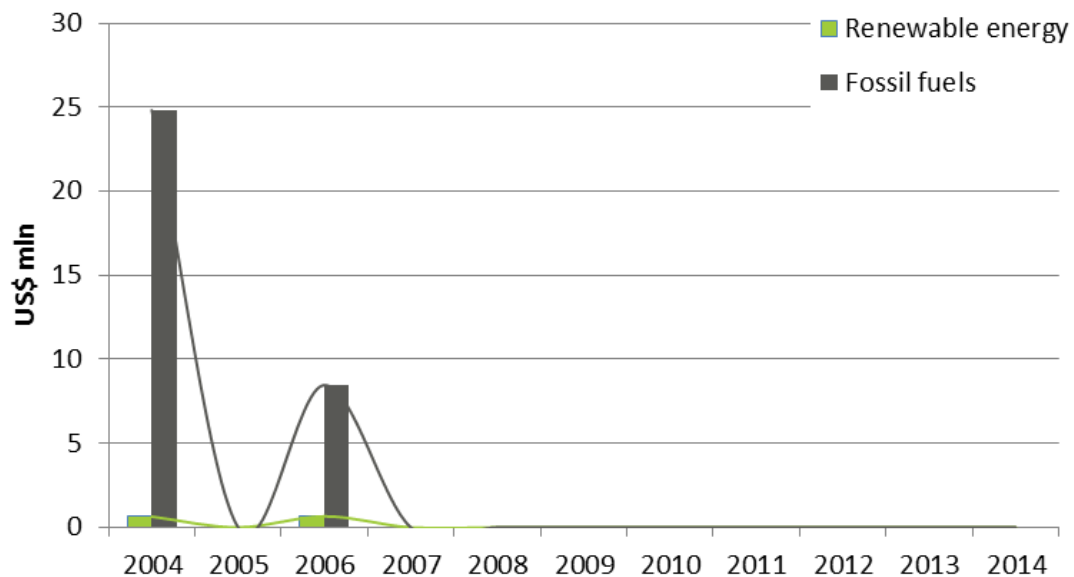
Figure 122 Jyske Bank Group loans to the selected companies (2004-2014)



- **Underwriting**

Underwriting to both renewable energy and fossil fuels decreased by 100% in the second half of the period of study. As Figure 123, this research did not identify many underwriting services to the selected companies attributable to renewable energy or fossil fuels, or renewable energy projects, where Jyske Bank was involved.

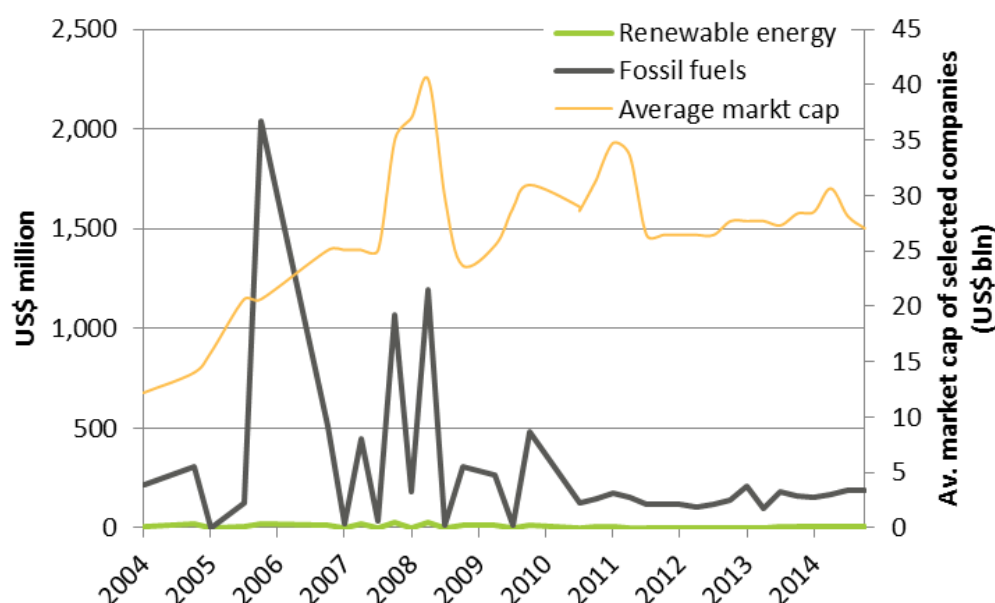
Figure 123 Jyske Bank Group underwriting services to the selected companies (2004-2014)



- **Shareholdings**

Jyske Bank Group's average annual investments in selected companies attributable to renewable energy decreased by 71% in the second half of the period of study. In the same period, investments in selected companies attributable to fossil fuels decreased by 64%. Figure 124 shows that the shareholding data for Jyske Bank Group seems to be incomplete for some years, causing the sharp spikes. Nevertheless, for the quarters where there is data, investments in selected companies attributable to renewable energy are well below investments in selected companies attributable to fossil fuels. Since the second quarter of 2010, investments in selected companies attributable to fossil fuels have levelled out, fluctuating between US\$ 100 million and US\$ 200 million. In the same period, investments in selected companies attributable to renewables has fluctuating between US\$ 0.5 million and US\$ 6 million.

Figure 124 Jyske Bank Group shareholdings in selected companies 2004-2014



6.3.4 Nordea

This section provides a description of the financing provided by Nordea to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In 2002, Nordea adopted the Corporate Citizenships Principles: “We work to reduce negative and increase positive environmental impact from our business activities.”¹¹⁴

In 2010, Nordea Head of Environmental, Social and Governance Analysis, Sasja Beslik, said of ESG Analysis, “We will use the CDP’s data to help drive investments towards a low carbon economy by inspiring our investee companies to measure and report their emissions and not least to improve our own products from a climate awareness perspective.”¹¹⁵

Also in 2010, Nordea subscribed to the Global Investor Statement on Climate Change. Since 2015, Nordea is also a member of the Institutional Investors Group on Climate Change (IIGCC).¹¹⁶

In 2013, Nordea became a signatory to Carbon Disclosure Project (CDP) Carbon Action. “Carbon Action is an investor-led initiative to accelerate company action on carbon reduction and energy efficiency activities which deliver a satisfactory return on investment. 190 investors with US\$ 18 trillion in assets under management ask the world’s highest emitting companies to make emissions reductions (year-on-year); with targets publicly disclosed.”¹¹⁷

114 Nordea (2009, March), *CSR Report 2008*.

115 Nordea (2010, May 26), “Nordea partners with Carbon Disclosure Project”, online: <http://www.nordea.com/en/press-and-news/news-and-press-releases/press-releases/2010/2010-05-26-nordea-partners-with-carbon-disclosure-project.html>, viewed in September 2015.

116 Institutional Investors Group on Climate Change (2014, September), *Global Investor Statement on Climate Change*.

117 Carbon Disclosure Project (2014, January), *2013 Activity Report*.

Table 54 shows that Nordea increased its loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects by 107% in the second half of the period of study. In the same period, its loans and underwriting to the selected companies attributable to fossil fuels also increased by 75%. The proportion of total loans and underwriting attributable to renewable energy increased by 6%, while the proportion attributable to fossil fuels increased by 16%.

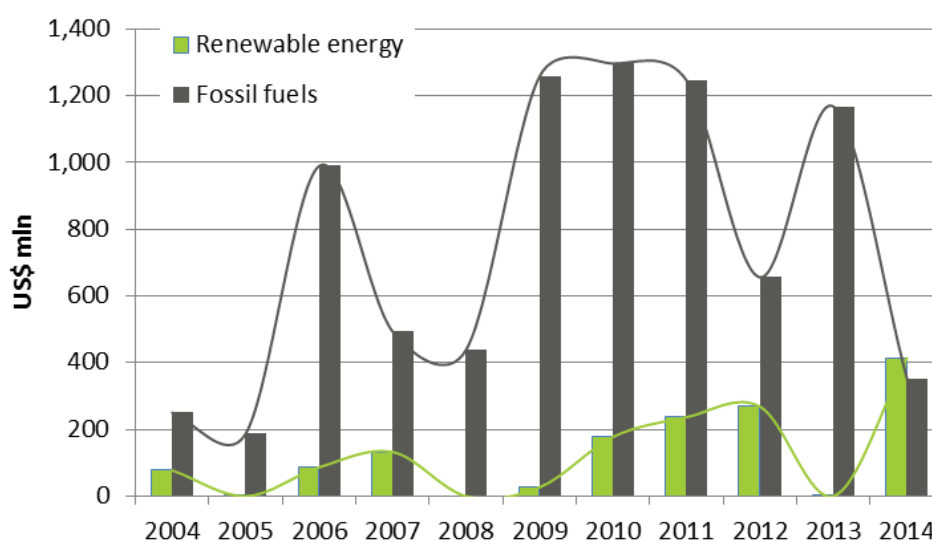
Table 54 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	107%	6%
Fossil fuels	75%	16%

• Loans

Loans to the selected companies attributable to renewable energy increased by 258% in the second half of the period of study. Loans to the selected companies attributable to fossil fuels, on the other hand increased by 79%. Figure 125 shows that throughout the period of study there is a large difference in the total value of loans to the selected companies attributable to renewable energy and to fossil fuels. Through much of the period of study, loans to the selected companies attributable to fossil fuels exceeded US\$ 400 million, even US\$ 1 billion. Loans to the selected companies attributable to renewable energy, on the other hand, only once exceed US\$ 400 million in the period of study.

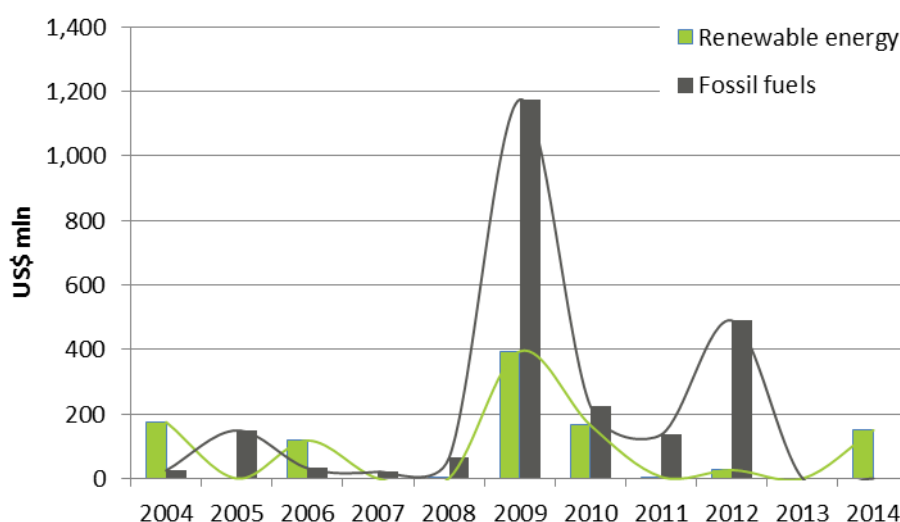
Figure 125 Nordea loans to the selected companies (2004-2014)



• Underwriting

Underwriting services to renewable energy, increased by 11% in the second half of the period of study. However, underwriting services to the selected companies attributable to fossil fuels, increased by 64%. Figure 126 shows that these changes are mostly attributable to the value of underwriting for fossil fuels from 2009 onwards.

Figure 126 Nordea underwriting services to the selected companies (2004-2014)

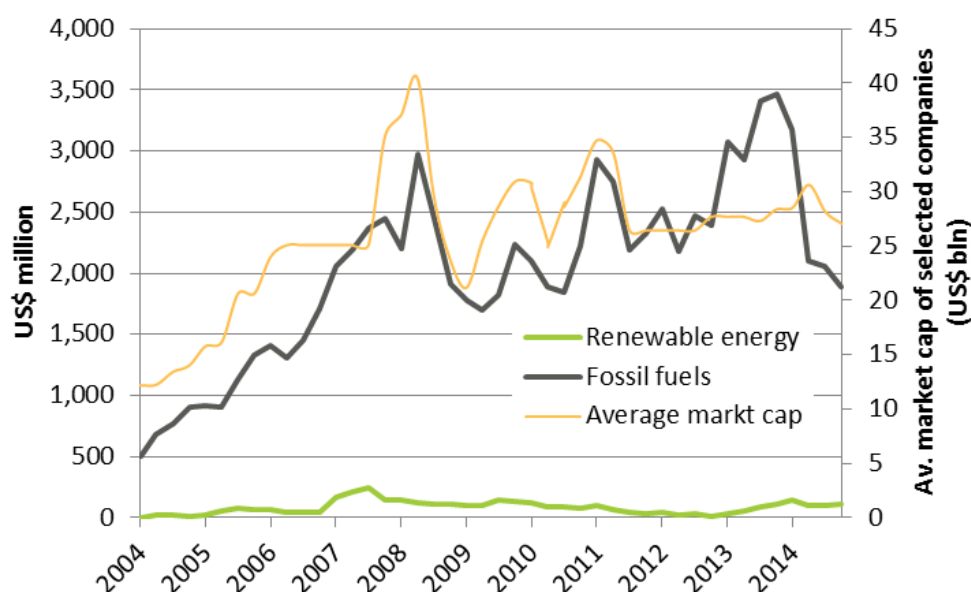


- **Shareholdings**

Noting that Nordea subscribed to the Global Investor Statement on Climate Change in 2010, and has been member of the Institutional Investors Group on Climate Change (IIGCC) since 2015, the high levels of investments in selected companies attributable to fossil fuels are concerning.¹¹⁸ Of further concern is that the average annual investments in selected companies attributable to renewable energy decreased by 15% in the second half of the period of study. In the same period, average annual investments in selected companies attributable to fossil fuels increased by 48%. Figure 127 shows that investments in selected companies attributable to fossil fuels have generally followed the fluctuations in the average market capitalization of the selected companies. Investments in selected companies attributable to renewable energy have not followed the same trends. The average annual investment in fossil fuels has been over US\$ 1.5 billion since the second quarter of 2006. The average annual investments in selected companies attributable to renewable energy have fluctuated between US\$ 25 million and US\$ 120 million.

118 Institutional Investors Group on Climate Change (2014, September), *Global Investor Statement on Climate Change*.

Figure 127 Nordea shareholdings in selected companies 2004-2014



6.3.5 Nykredit Association

This section provides a description of the financing provided by Nykredit to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Nykredit states that “[i]n the customer area Nykredit will, by implementing own initiatives and by joining forces with key providers in the area, incorporate climate and environmental aspects as a natural part of our business activities. Our advisory services and knowledge relating to climate and environmental parameters will be improved, and climate and environmental aspects will play an increasing role in valuations.”¹¹⁹

- **Loans and underwriting**

This research did not identify any loans or underwriting services provided by Nykredit Association to the selected companies. Nykredit’s core activities are banking and mortgages.

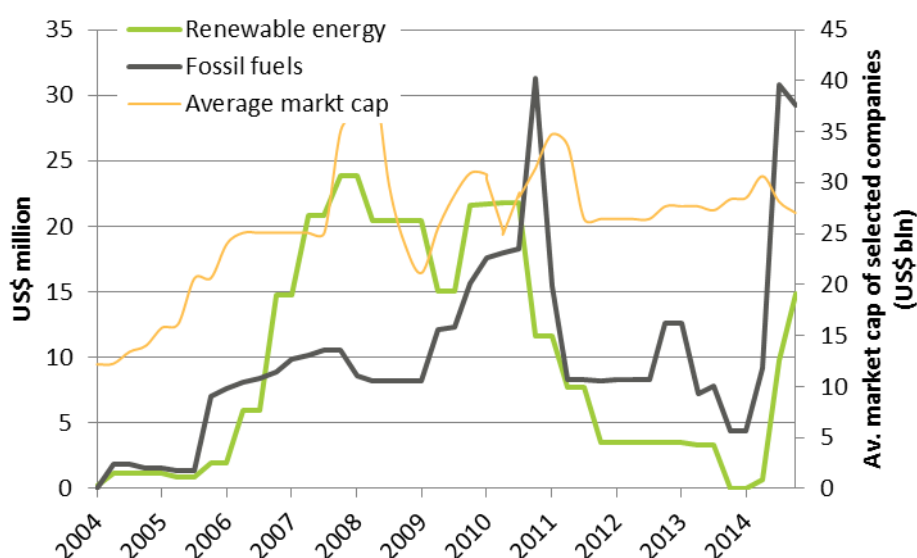
- **Shareholdings**

It is important to note that Nykredit is one of the largest custodial service providers for investors in Denmark. Investments on own account are a small proportion of their identified investments. Nykredit could not provide us with disaggregated data.

119 Nykredit (n.d.), “Climate and environmental targets”, online: <https://www.nykredit.com/aboutnykredit/info/sustainability/nykredit-climate-results.xml>, viewed in September 2015.

In the second half of the period of study, Nykredit's investments attributable to renewable energy decreased by 15%. In the same period, investments in selected companies attributable to fossil fuels increased by 106%. Figure 128 shows that for the much of the first half of the period of study, investments in selected companies attributable to renewable energy were higher than investments in selected companies attributable to fossil fuels. Nevertheless, there was an upward trend in investments in selected companies attributable to fossil fuels. Investments in both renewable energy and fossil fuels decreased after the third quarter of 2010. Both show an upward trend since the fourth quarter of 2013. However, worryingly, investments in selected companies attributable to fossil fuels exceeds investments in selected companies attributable to renewable energy.

Figure 128 Nykredit Association shareholdings in selected companies 2004-2014



6.3.6 Spar Nord

This research did not identify any financial relationships between Spar Nord and the selected companies. This indicates that Spar Nord did not participate in syndicated loans and underwriting to the selected companies, and did not invest in their shares. It is possible that Spar Nord did provide bilateral that cannot be identified on the basis of publicly available resources.

6.3.7 Sydbank

This section provides a description of the financing provided by Sydbank to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Table 55 shows that Sydbank provided 236% more loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects companies in the second half of the period of study. No loans or underwriting to fossil fuels were identified.

Table 55 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

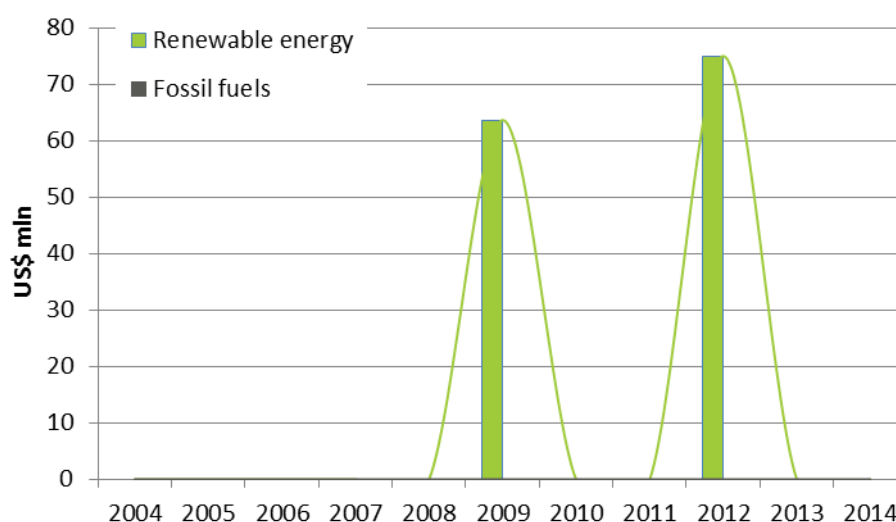
Energy source	Percent change	Proportion change
---------------	----------------	-------------------

Energy source	Percent change	Proportion change
Renewable energy	236%	0%
Fossil fuels	n/a	n/a

- **Loans**

Sydbank's loans to the selected companies attributable to renewable energy increased by 236%, from US\$ 32 million to US\$ 107 million in the second half of the period of study. Figure 129 shows that the majority of loans to the selected companies attributable to renewable energy occurred in 2009 and 2012.

Figure 129 Sydbank loans to the selected companies (2004-2014)



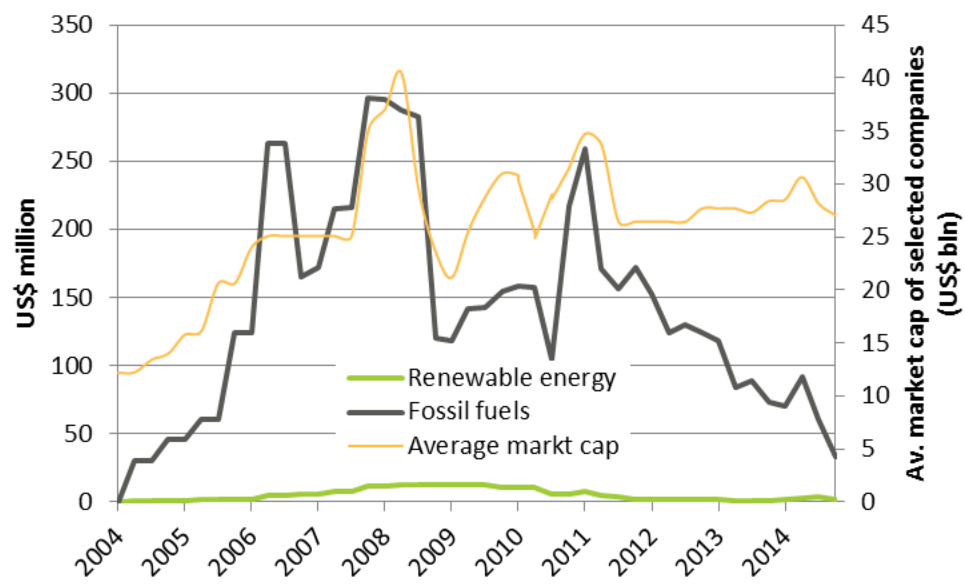
- **Underwriting**

This research did not identify any underwriting services provided by Sydbank to the selected companies.

- **Shareholdings**

In the second half of the period of study, Sydbank's average annual investments in selected companies attributable to renewable energy decreased by 35%. In the same period, investments in selected companies attributable to fossil fuels decreased by 13%. Figure 130 shows that Sydbank's investments in selected companies attributable to fossil fuels generally followed the fluctuations in average market capitalization of the selected companies. Investments in selected companies attributable to renewable energy increased in the period 2007-2010, but declined ever since. Since 2011, Sydbank's investments attributable to renewable energy have fluctuated between US\$ 0.6 million and US\$ 4 million. Investments in selected companies attributable to fossil fuels were generally over US\$ 100 million, until 2013.

Figure 130 Sydbank shareholdings in selected companies 2004-2014

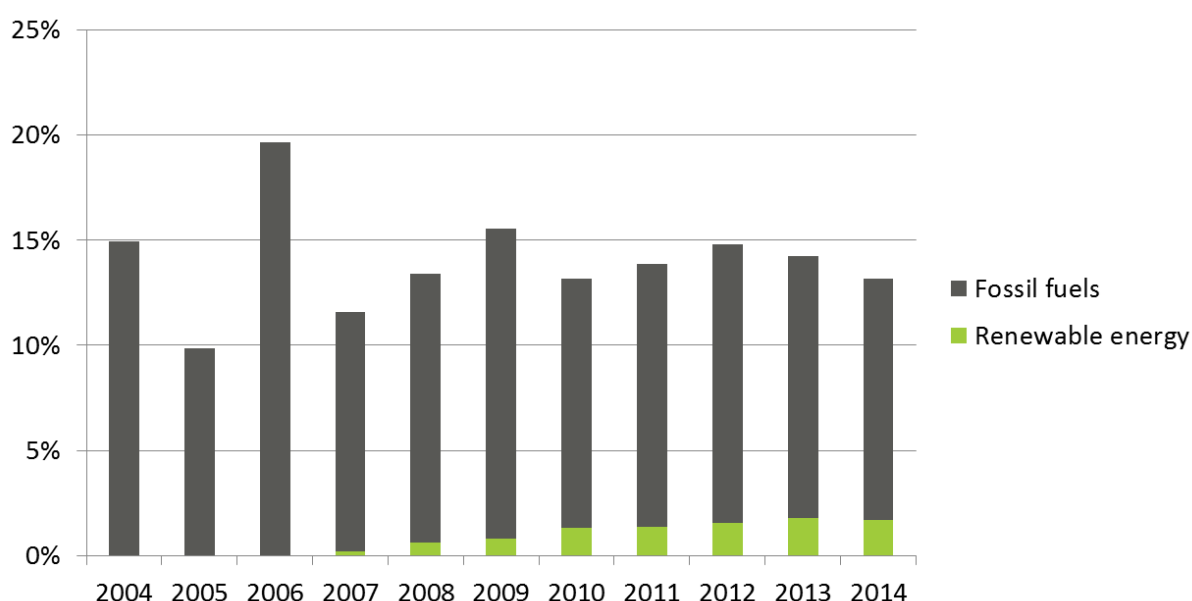


Chapter 7 France

This chapter outlines the trends in financing of the five selected financial institutions active in France towards the selected companies attributable to fossil fuels (coal mining and oil & gas), renewable energy input equipment manufacturers (solar panels, concentrated solar power plants, wind turbine manufacturers, and geothermal power turbine and engineering companies), renewable energy projects, and utility companies, over the period 2004-2014.

Figure 131 provides an overview of the portfolio composition of the selected utility companies active in France. It shows that there are still fluctuations in levels fossil fuels, but potentially a decline since 2012. There has also been a gradual increase in installed capacity of renewable energy, albeit at very low levels. It should be noted that in France a number of energy inputs (e.g. nuclear power and hydropower) play a significant role, though these are not included in the scope of this research (see section 2.3.3 and section 2.3.4).

Figure 131 Annual portfolio proportions of researched utility companies active in France



7.1 Loans and underwriting

This section provides an analysis of the loans and underwriting provided by financial institutions active in France to the selected companies and renewable energy projects. Section 7.1.1 provides an outline of the annual changes in the financing to the selected companies. Section 7.1.2 ranks the financial institutions active in France according to their financing of fossil fuels.

7.1.1 Annual analysis

Figure 132 provides an overview of the loans provided by the financial institutions active in France to the selected companies. There has been a general decline in loans provided to the selected companies attributable to fossil fuels since 2007. There has also been a decrease in the level of loans provided to renewable energy since 2006. From 2013 there does seem to be an upward trend in loans to the selected companies attributable to renewable energy and renewable energy projects. However, there is a huge difference in loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Loans to the selected companies attributable to renewable energy have hardly exceeded the US\$ 3 billion mark, while loans to the selected companies attributable to fossil fuels have generally been over US\$ 15 billion.

Figure 132 Annual loans provided by financial institutions active in France to the selected companies

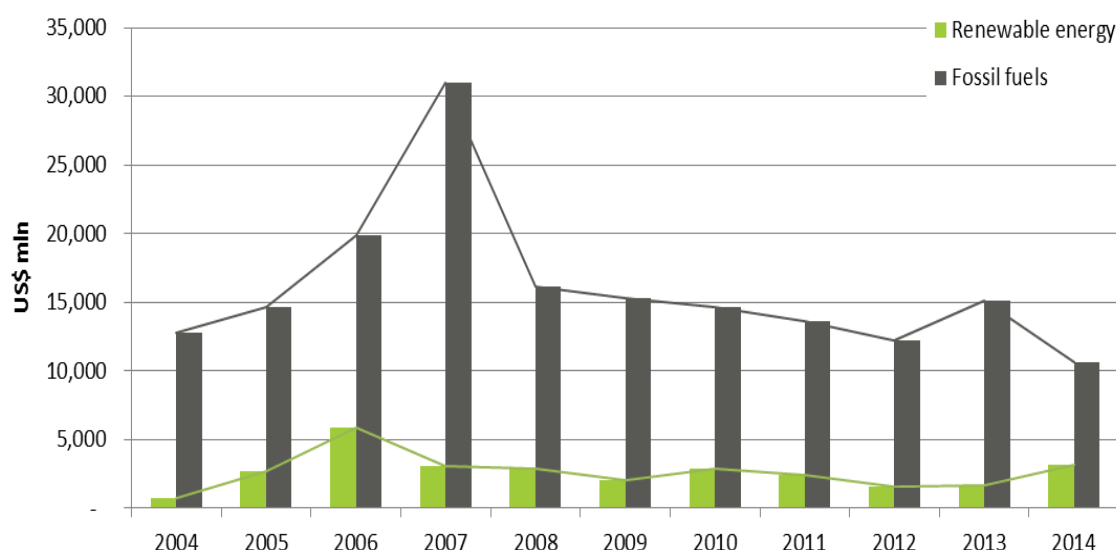
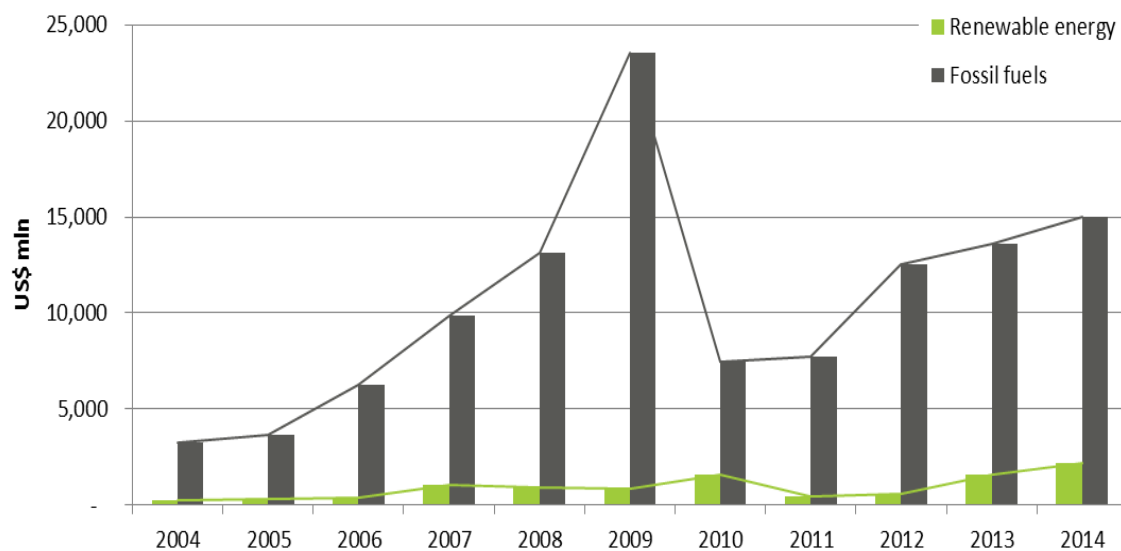


Figure 133 shows that the differences in financing between renewable energy and fossil fuels is even more pronounced in underwriting. Underwriting to fossil fuels peaked in 2009, declined thereafter, but has been gradually increasing again since 2011. Underwriting to renewable energy peaked in 2010, reached a low point in 2011, but has been gradually increasing since 2012.

Figure 133 Annual underwriting services provided by financial institutions active in France to the selected companies



7.1.2 Rankings

This section provides a ranking of the financial institutions active in France in terms of the value of their loans and underwriting services to the selected companies attributable to fossil fuels. Figure 134 shows the ranking of the top financiers of the selected companies attributable to fossil fuels for the period 2009 to 2014. Zooming in on the most recent five years provides a more current picture of the financial activities of the selected financial institutions with regard to their financing of the selected companies attributable to fossil fuels and renewable energy. The top three places are occupied by the largest French banks, BNP Paribas Société Générale, and Crédit Agricole. In the period 2009 to 2014, BNP Paribas provided approximately US\$ 57 billion to the selected companies attributable to fossil fuels. In the same period it only provided approximately US\$ 6 billion in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects. In the same period Société Générale and Crédit Agricole provided approximately US\$ 35 billion in loans and underwriting to the selected companies attributable to fossil fuels. They only provided approximately US\$ 5 billion in loans and underwriting services to the selected companies attributable renewable energy.

Figure 134 shows that this difference in financing to fossil fuels and renewable energy is common to the majority of the financial institutions active in France.

Figure 134 Ranking of the top financiers of the selected companies attributable to fossil fuels (loans & underwriting, US\$ mln, 2009-2014)

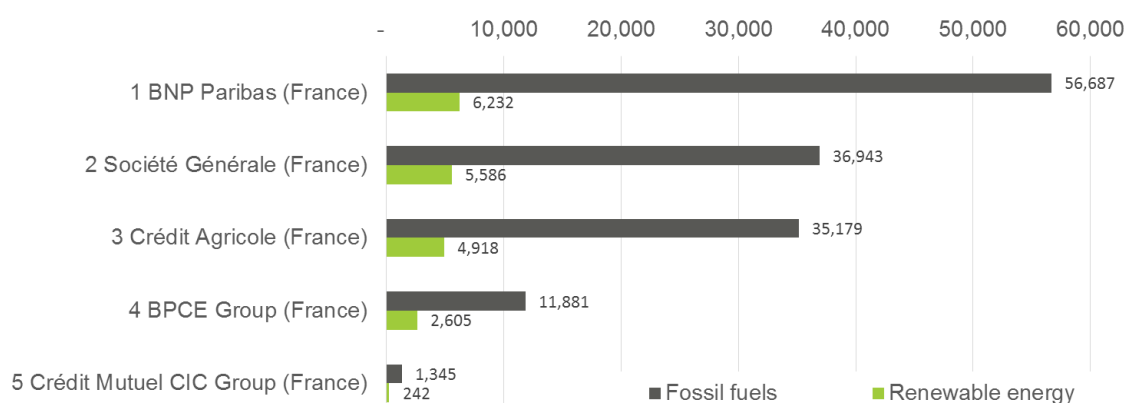


Table 56 provides an overview of the loans and underwriting to the selected companies attributable to fossil fuels and renewable energy. It shows that for all of the financial institutions active in France the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels was higher than 80%. For one this proportion was 90%. This indicates the huge disparity between the financing of renewable energy and fossil fuels.

Table 56 also shows the percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Two of the researched financial institutions active in France decreased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). These decreases were small, not exceeding 7 percentage points. Three financial institutions actually increased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). BPCE Group had the highest increase in the proportions of financing to fossil fuels of 13 percentage points.

Table 56 Overview of loans and underwriting to the selected companies attributable to fossil fuels and renewable energy, and renewable energy projects (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
BNP Paribas	France	56,687	6,232	90%	1%
Société Générale	France	36,943	5,586	87%	-7%
Crédit Agricole	France	35,179	4,918	88%	2%
BPCE Group	France	11,881	2,605	82%	13%
Crédit Mutuel CIC Group	France	1,345	242	85%	-6%

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Total		142,035	19,583	88%	-1%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

7.2 Shareholdings

This section provides an analysis of the investments in shareholdings by financial institutions active in France in the selected companies. Section 7.2.1 provides an outline of the annual changes in the investments in selected companies. Section 7.2.2 ranks the financial institutions active in France according to their investments in selected companies attributable to fossil fuels.

7.2.1 Annual analysis

Figure 135 shows that the investments of financial institutions active in France attributable to fossil fuels have generally followed the fluctuations in average market capitalisation of the selected companies. In the period 2004-2006, the investments exceeded the trend lines. However, since 2012 there seems to be a decline in investments in selected companies attributable to fossil fuels. The figure shows that there seems to be gradual increase in investments in selected companies attributable to renewable energy since a low in 2012, but essentially starting in 2004.

Figure 135 Annual investments by financial institutions active in France in selected companies

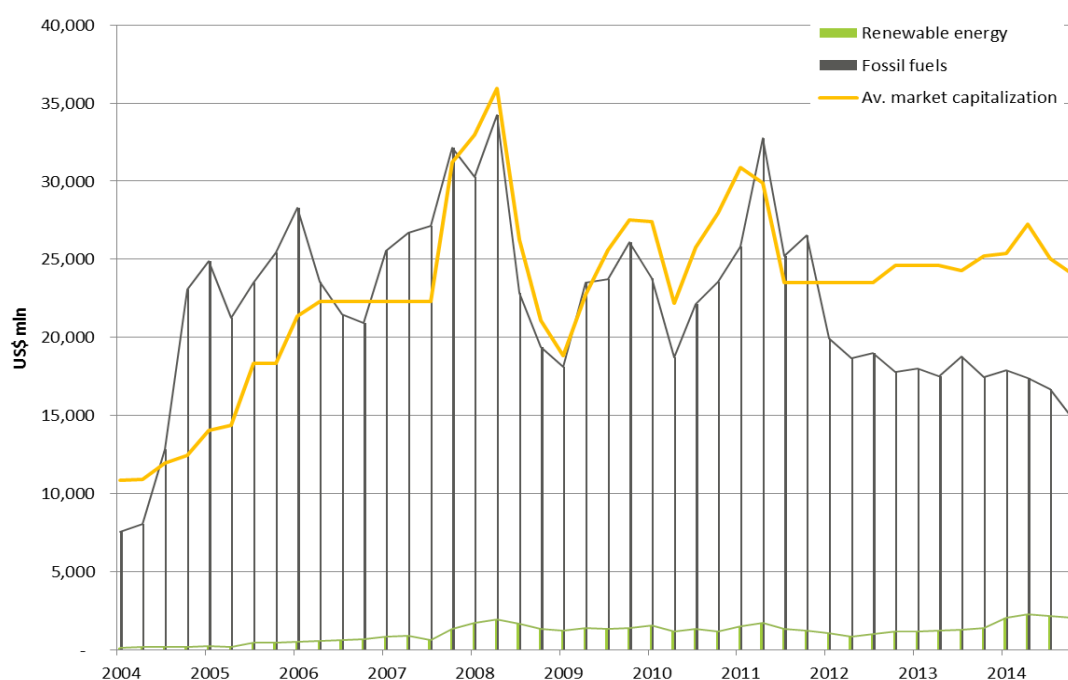


Table 57 shows the large gap in average investments in selected companies attributable to renewable energy and fossil fuels.

Table 57 Average annual investments in selected companies attributable to renewable energy (US\$ mln)

Year	Renewable energy	Fossil fuels
2004	165	12,862
2005	329	23,782
2006	580	23,547
2007	918	27,874
2008	1,653	26,679
2009	1,328	22,863
2010	1,305	22,042
2011	1,426	27,565
2012	1,015	18,822
2013	1,242	17,934
2014	2,123	16,683

Table 58 shows that there has been a gradual increase in proportion of total investments in selected companies attributable to renewable energy and renewable energy projects. Nevertheless, the average proportion of investments attributable to renewable energy was 3%, while the proportion of investments attributable to fossil fuels was 65%.

Table 58 Average annual % investment in renewable energy

Year	Renewable energy	Fossil fuels
2004	1%	59%
2005	1%	59%
2006	1%	34%
2007	1%	40%
2008	4%	70%
2009	4%	73%
2010	4%	70%
2011	4%	78%
2012	4%	78%
2013	5%	78%
2014	9%	74%
Average	3%	65%

7.2.2 Rankings

This section provides a ranking of the financial institutions active in France in terms of the value of their investments attributable to fossil fuels. Figure 136 provides a ranking of the top financial institutions on the basis of their average annual investments in the selected companies attributable to fossil fuels in the period 2009-2014. BPCE Group, BNP Paribas, and Crédit Agricole occupy the top three positions with the highest average annual investments in selected companies attributable to fossil fuels. All three financial institutions invested on average more than US\$ 5 billion in fossil fuels annually in the period 2009-2014.

Figure 136 also shows the large gap between average annual investments in selected companies attributable to fossil fuels and renewable energy. Only one financial institution had an average annual investment in renewable energy of over US\$ 0.5 billion, BNP Paribas.

Figure 136 Ranking of the top average annual investors in the selected companies attributable to fossil fuels (US\$ mln, 2009-2014)

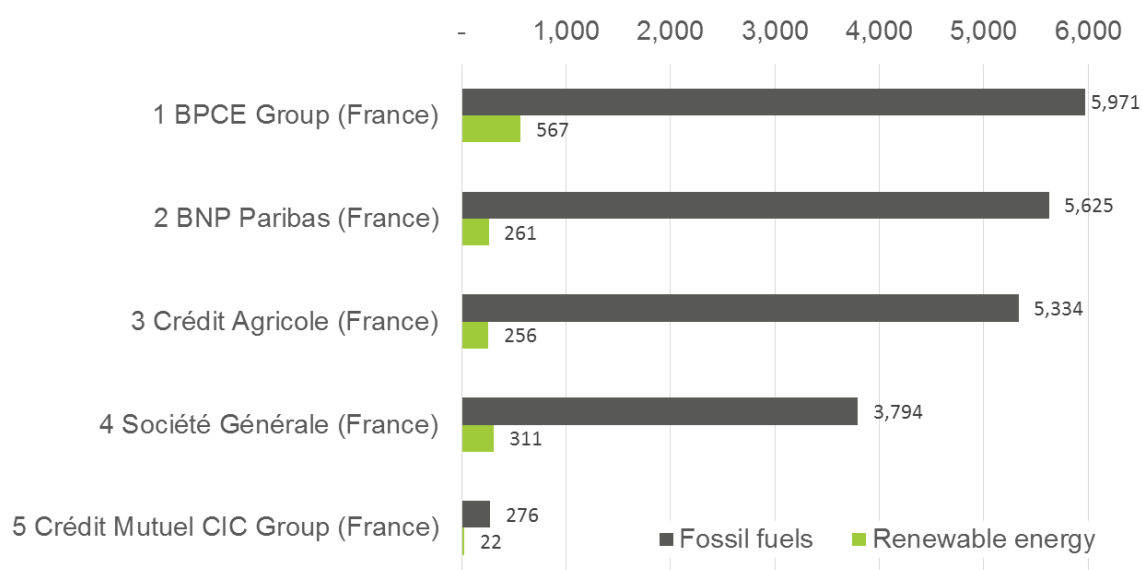


Table 59 provides an overview of the investments in the selected companies attributable to fossil fuels and renewable energy. It shows that for all of the financial institutions active in France the proportion of fossil fuels in the total investments in the selected companies attributable to renewable energy and fossil fuels was higher than 90%. For two this proportion was over 95%. This indicates the huge disparity between the financing of renewable energy and fossil fuels.

Table 59 also shows the change in the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in the investments in the selected companies attributable to renewable energy and fossil fuels. Five of the six financial institutions marginally decreased the proportion of fossil fuels in the investments in the selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). However, these decreases were very small, not exceeding 7 percentage points. One financial institution marginally increased the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014).

Table 59 Overview of shareholdings in the selected companies attributable to fossil fuels and renewable energy (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
BPCE Group	France	5,971	567	91%	-6%
BNP Paribas	France	5,625	261	96%	1%
Crédit Agricole	France	5,334	256	95%	-2%
Société Générale	France	3,794	311	92%	-5%
Crédit Mutuel CIC Group	France	276	22	93%	-7%
Total		20,999	1,417	94%	-3%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

7.3 Financial institution analysis

This section provides an analysis of the changes in values of loans, underwriting services and investments in shares in selected companies that can be attributed to renewable energy and fossil fuels individually for the financial institutions active in France. The sub-sections are ordered alphabetically by bank name.

7.3.1 BNP Paribas

This section provides an analysis of the financing provided by the BNP Paribas to the selected companies that can be attributed to renewable energy and fossil fuels.

In 2009, BNP Paribas stated that “BNP Paribas Asset Management (BNP PAM) encourages companies to consider climate change issues in their investment decisions.”¹²⁰

In 2010, BNP Paribas created a Climate Change Steering Committee “to identify the risks and opportunities related to climate change and address ways in which to support the transition to a low carbon economy.” The bank also endorsed the Climate Principles in 2010. BNP Paribas also discloses its carbon information to the Carbon Disclosure Project.¹²¹

BNP Paribas, in 2013, stated “BNP Paribas has made combating climate change the cornerstone of its environmental responsibility. To help tackle this critical issue for ecosystems, communities and the global economy, the Group seeks to reduce the direct and indirect impact of its business activities. Meanwhile, the BNP Paribas Foundation supports scientific research into the fundamental mechanisms of the world’ climate and the impact of their disruption.”¹²²

120 BNP Paribas (2010, July), *Report on Environmental and Social Responsibility 2009*, p. 12.

121 BNP Paribas (2011, May), *2010 Corporate Social Responsibility Report*, p. 14-15.

122 BNP Paribas (2014, February), *2013 Facts and Figures*, p. 53.

In 2014, BNP Paribas stated that “[a]mong its environmental initiatives BNP Paribas has chosen to prioritise its contribution by combating climate change. The Group aims to reduce the environmental impacts resulting indirectly from its banking activities and directly from its own operations. In practical terms, BNP Paribas has 3 commitments: finance the transition to renewable energy; reduce its own environmental footprint (the target to reduce CO2 emissions per employee by 10% between 2012 and 2015 has almost been reached); and support research into climate change.”¹²³

More recently, BNP Paribas stated that, “[i]n 2015, the year that Paris will be hosting the International Climate Conference, BNP Paribas will be making an even greater commitment to financing the energy transition by mobilising all resources available to it. And in this way we will continue to make progress as a responsible bank.”¹²⁴

BNP Paribas is member of UNEP Finance Initiative and signatory to the UN Principles for Responsible Investment.

Table 60 shows that BNP Paribas’ total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects decreased by 28%, while loans and underwriting to the selected companies attributable to fossil fuels decreased by 20%. As a proportion of total loans and underwriting, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects did not increase in the second half of the period of study. The proportion of loans and underwriting to the selected companies attributable to fossil fuels of the total loans and underwriting increased by 6% in the second half of the period of study. This undermines the commitments BNP Paribas has made to combat climate change and finance renewable energy.

Table 60 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	-28%	0%
Fossil fuels	-20%	6%

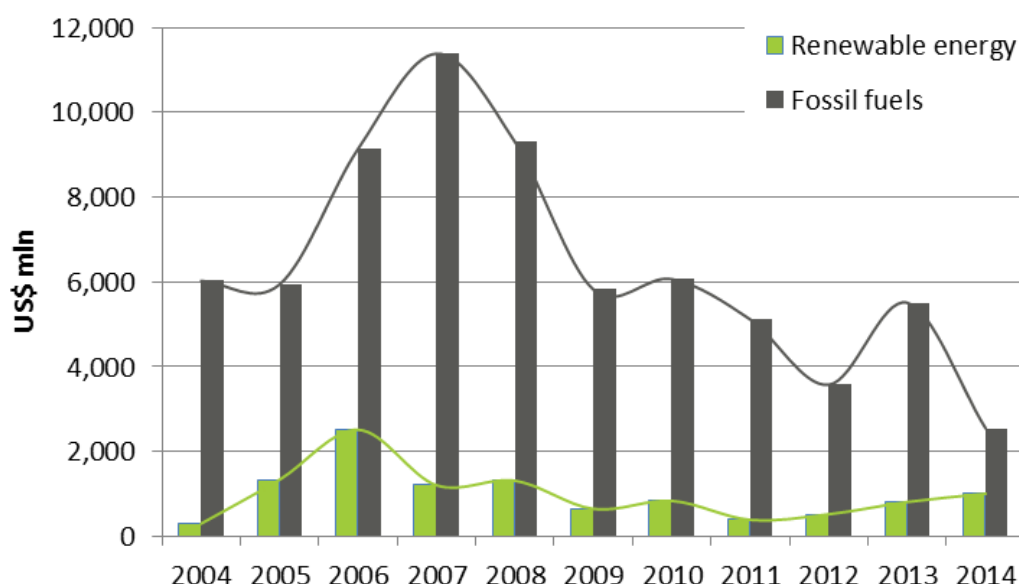
- **Loans**

BNP Paribas provided 44% fewer loans to the selected companies attributable to renewable energy in the second half of the period of study. Loans to the selected companies attributable to fossil fuels decreased by 42%. Figure 27 shows that BNP Paribas provided more than US\$ 2 billion in loans to the selected companies attributable to renewable energy in 2006. However, levels have fallen to between US\$ 300 million and US\$ 1 billion ever since. After a height of US\$ 12 billion in 2007, loans to the selected companies attributable to fossil fuels have gradually been decreasing. Loans to the selected companies attributable to fossil fuels reached a low of approximately US\$ 2.5 billion in 2014.

123 BNP Paribas (2015, June), *2014 Annual Report*, p. 8-9.

124 BNP Paribas (2015, June), *2014 Corporate Social Responsibility Report*, p. 4.

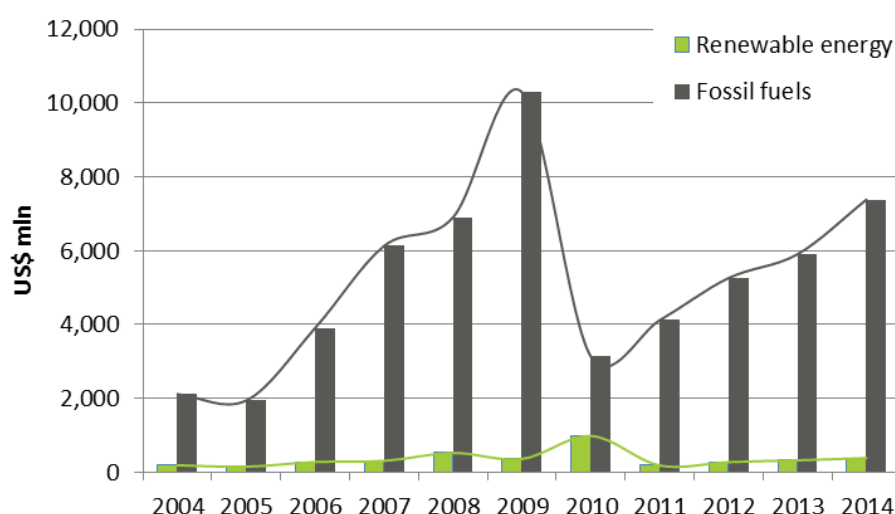
Figure 137 BNP Paribas loans to the selected companies (2004-2014)



- **Underwriting**

Underwriting to renewable energy increased by 43% in the second half of the period of study, while underwriting to fossil fuels increased by a lesser 18%. Figure 28 shows that underwriting to renewable energy has not exceeded US\$ 1 billion, but has generally fluctuated between US\$ 250 million and US\$ 400 million. The peak in renewable energy financing in 2010 did not last. Underwriting to fossil fuels, on the other hand, has generally been over US\$ 4 billion. After a decline in 2010 underwriting to fossil fuels has been on a concerning upward trajectory.

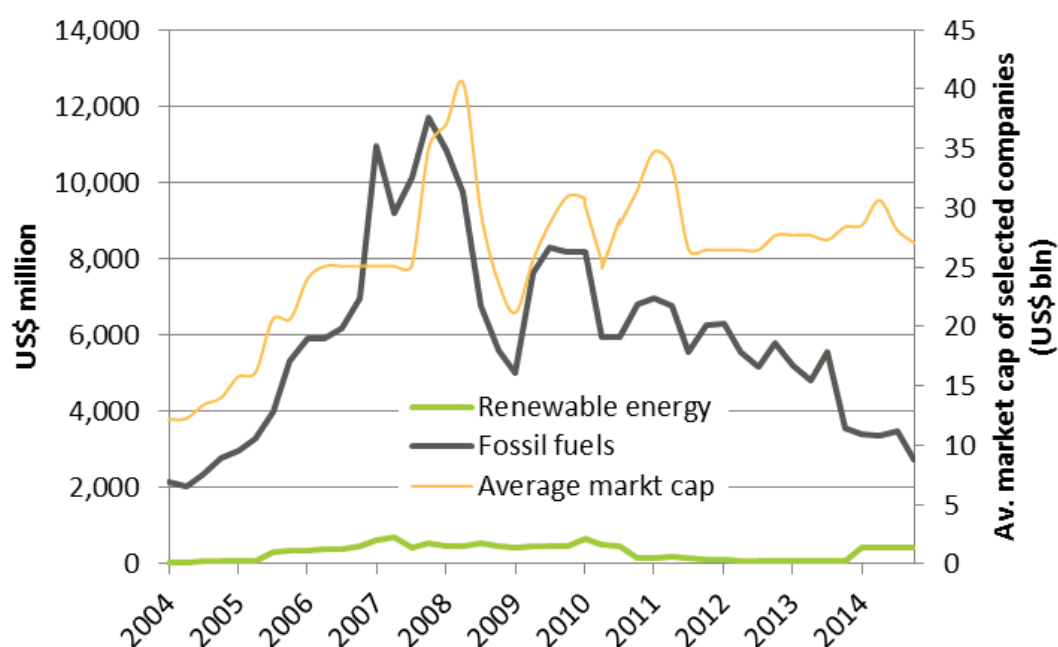
Figure 138 BNP Paribas underwriting services to the selected companies (2004-2014)



- **Shareholdings**

BNP Paribas' total average annual investments in selected companies attributable to renewable energy declined 25% in the second half of the period of study. Total average annual investments in selected companies attributable to fossil fuels decreased by a lesser 13%, but seem to be on a steadily declining trend since 2010. As a proportion of total average annual investments, investments in selected companies attributable to renewable energy increased by 2%, while the proportion of investments in selected companies attributable to fossil fuels increased by 50%. Figure 29 shows that average annual investments in selected companies attributable to renewable energy did not reach above US\$ 400 million, while investments in selected companies attributable to fossil fuels have always been over US\$ 2 billion.

Figure 139 BNP Paribas shareholdings in selected companies 2004-2014



7.3.2 BPCE Group

This section provides description of the financing provided by the BPCE Group to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

From 2009 to 2014, the following commitment by BPCE Group has appeared in all annual reports, “Responsible Growth: Respecting the environment, fighting against global warming: these requirements drive innovation, growth and jobs, through new goods and services to be developed to ensure that society adapts to sustainable development.”¹²⁵

BPCE Group is also participant in the Carbon Disclosure Project, and signatory to the UN Principles for Responsible Investment.

125 BPCE Group (2011, April), *2010 Registration and Full-Year Financial Report*, p. 371.

Table 61 shows that, in the second half of the period of study, BPCE Group' total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects decreased by 22%. In the same period, loans and underwriting to the selected companies attributable to fossil fuels increased by 60%. The proportion of total loans and underwriting attributable to renewable energy, decreased by 7%. The proportion of loans to the selected companies attributable to fossil fuels increased by 8%.

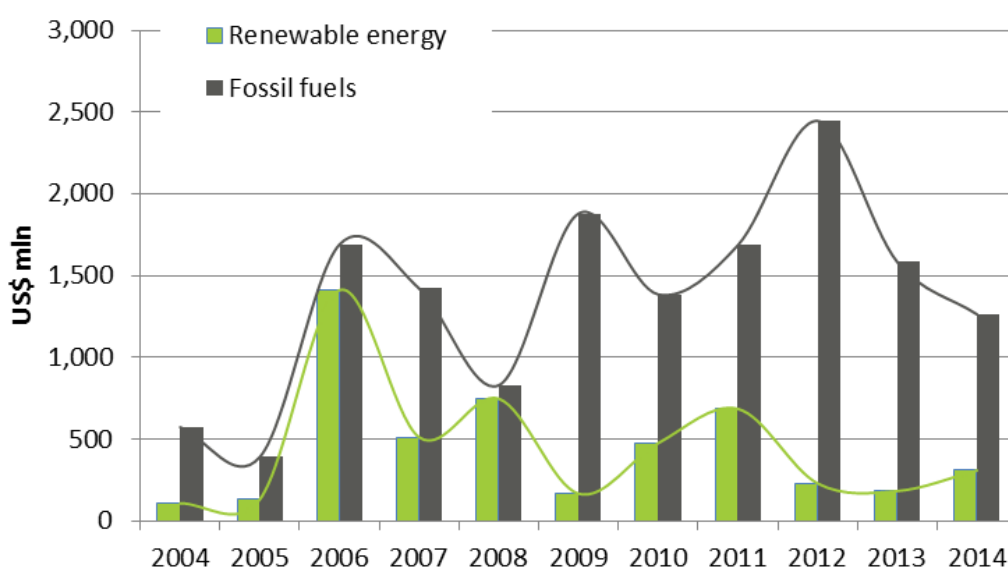
Table 61 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	-22%	-7%
Fossil fuels	60%	8%

- Loans**

Loans to the selected companies attributable to renewable energy decreased by 34%. BPCE Group loans to the selected companies attributable to fossil fuels increased by 59%. Figure 140 provides a more detailed picture of the changes in loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Before 2008, the difference between the levels of loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels was not too large. For three years loans to renewable exceed US\$ 500 million. In 2006 loans to the selected companies attributable to renewable energy reached US\$ 1.4 billion. However, worryingly, after 2009 the difference between loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels has increased.

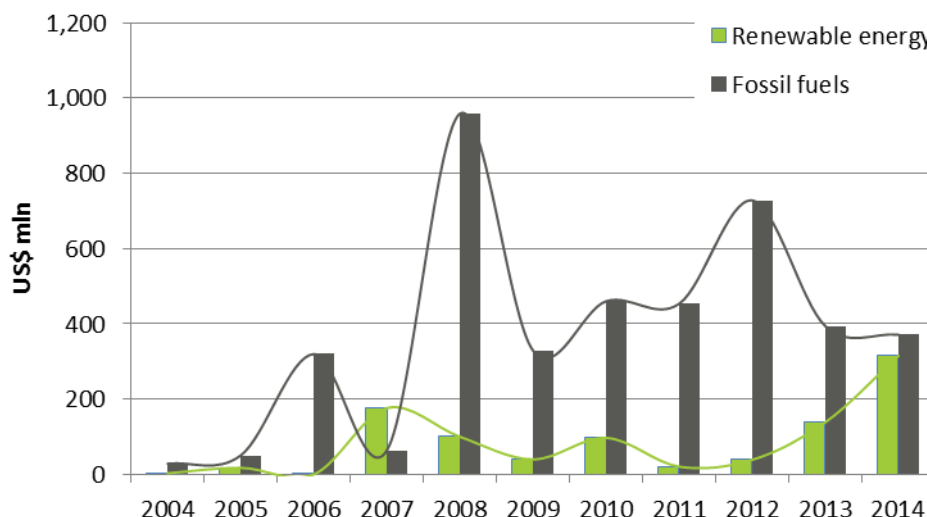
Figure 140 BPCE Group loans to the selected companies (2004-2014)



- Underwriting**

BPCE Group underwriting services to renewable energy increased by 99%, in the second half of the period of study. Underwriting for fossil fuels increased by 62%. Underwriting to renewable energy did not exceed US\$ 300 million through the period of study, as can be seen in Figure 141. Underwriting to fossil fuels hardly fell below US\$ 400 million.

Figure 141 BPCE Group underwriting services to the selected companies (2004-2014)



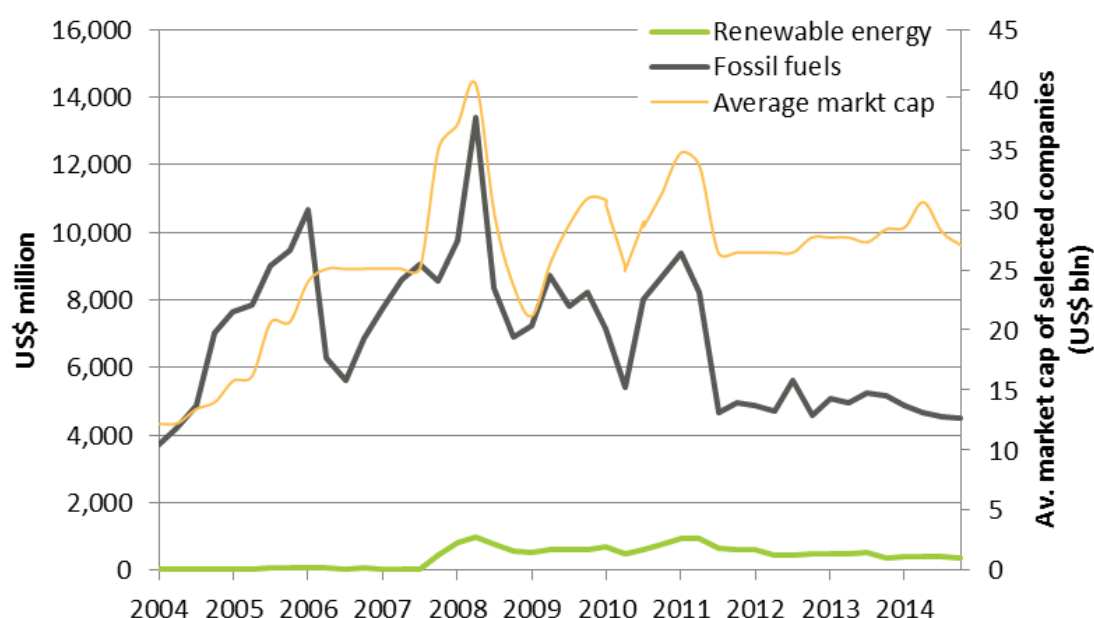
• Shareholdings

BPCE Group's investments in the selected companies attributable to renewable energy increased by 105% in the second half of the period study. Investments attributable to fossil fuels decreased by 23%.

Figure 142 shows that, while BPCE Group's shareholdings in fossil fuels have generally followed the fluctuations of average market capitalization, since 2009 they have been on a downward trend. Investments in selected companies attributable to renewable energy have remained generally stable after 2012. Investments in selected companies attributable to fossil fuels almost reached US\$ 1 billion in 2011. However, they have generally fluctuated around US\$ 400 million since 2012.

Investments in selected companies attributable to fossil fuels, however, have never been below US\$ 4 billion.

Figure 142 BPCE Group shareholdings in selected companies 2004-2014



7.3.3 Crédit Agricole

This section provides a description of the financing provided by Crédit Agricole to the selected companies that can be attributed to renewable energy and fossil fuels.

Crédit Agricole says of itself, “Crédit Agricole is one of the major players in the energy transition. It aims to help support the emergence of a development model that is less energy consuming and more respectful of the environment.”¹²⁶

Crédit Agricole, in 2009, stated that it “continues to make climate change prevention a priority both internally and externally, following the Grenelle environment roundtable and in the spirit of the Copenhagen summit. To this end, the Group’s efforts are focused mainly in three directions: indirect impacts, green product range and direct impacts.”¹²⁷

In 2010, Crédit Agricole stated that “For several years, the Crédit Agricole Group has been committed to reducing its negative environmental impacts. This commitment is reflected, in particular, in its participation since 2003 in the United Nations Global Compact, as well as the signature of the Equator Principles in 2003 by Crédit Agricole CIB and the signature of the PRIs in 2006 by Amundi. The Group has also made tackling climate change one of the main pillars of its environmental policy. This commitment was reinforced in late 2008 with the adoption of the Charter of Climate Principles for the financial sector, coordinated by the Climate Group.”¹²⁸

126 Crédit Agricole (2015, March), *Registration Document and Annual Report 2014*, p. 30.

127 Crédit Agricole (2010, March), *Registration Document and Annual Report 2009*, p. 228.

128 Crédit Agricole (2011, March), *Registration Document and Annual Report 2010*, p. 59.

At the UNO Climate Summit in September 2014, Jean-Yves Hoher, Chief Executive Officer of Crédit Agricole, “made four commitments to be achieved by end-2015: to structure over US\$20 billion in new financing by 2015 to combat climate change; to measure and publish the carbon footprint of its financing; for sectors representing a total of 80% of the carbon emissions financed by the bank, to apply sector policies incorporating analysis and exclusion criteria governing the selection of financing and investments; to put forward new partnerships to finance environmental projects.”¹²⁹

Crédit Agricole is a participant in the Carbon Disclosure Project and a signatory to the Climate Principles.

Table 62 shows that the total loans and underwriting to the selected companies attributable to renewable energy provided by Crédit Agricole actually decreased by 7% in the second half of the period of study. Loans and underwriting to the selected companies attributable to fossil fuels, on the other hand, increased by 8%. In terms of proportions of total loans and underwriting, financing to renewable energy did not change. However, the proportion of total loans and underwriting attributable to fossil fuels actually increased by 7%. These indicators suggest that Crédit Agricole is not living up to its own standards.

Table 62 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

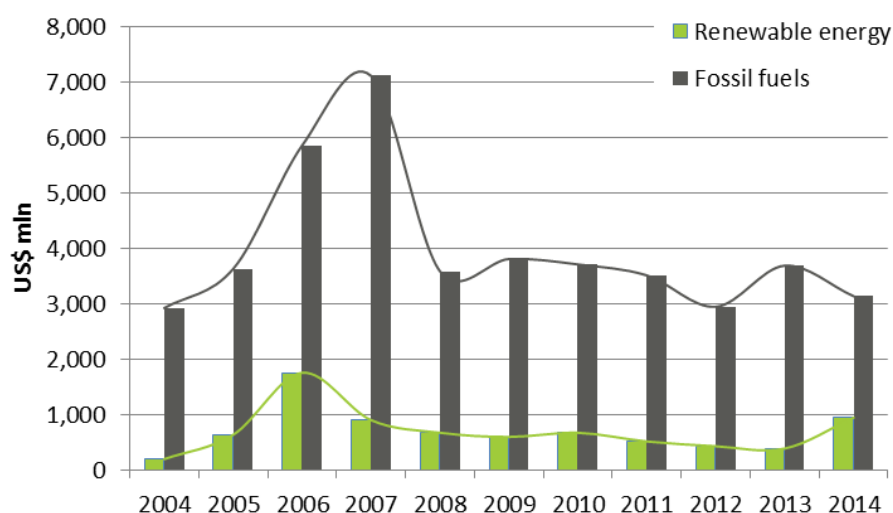
Energy source	Percent change	Proportion change
Renewable energy	-7%	0%
Fossil fuels	8%	7%

- **Loans**

Crédit Agricole’s loans to the selected companies attributable to renewable energy decreased by 27% in the second half of the period of study. Loans to the selected companies attributable to renewable energy decreased by 24%. Figure 36 shows that the economic crisis had a marked effect on loans fossil fuels, which have since fluctuated between US\$ 3 and US\$ 4 billion. Loans to the selected companies attributable to renewable energy have fluctuated below US\$ 1 billion, but have shown an upward trend since 2013.

129 Crédit Agricole (2015, March), *Registration Document and Annual Report 2014*, p. 32.

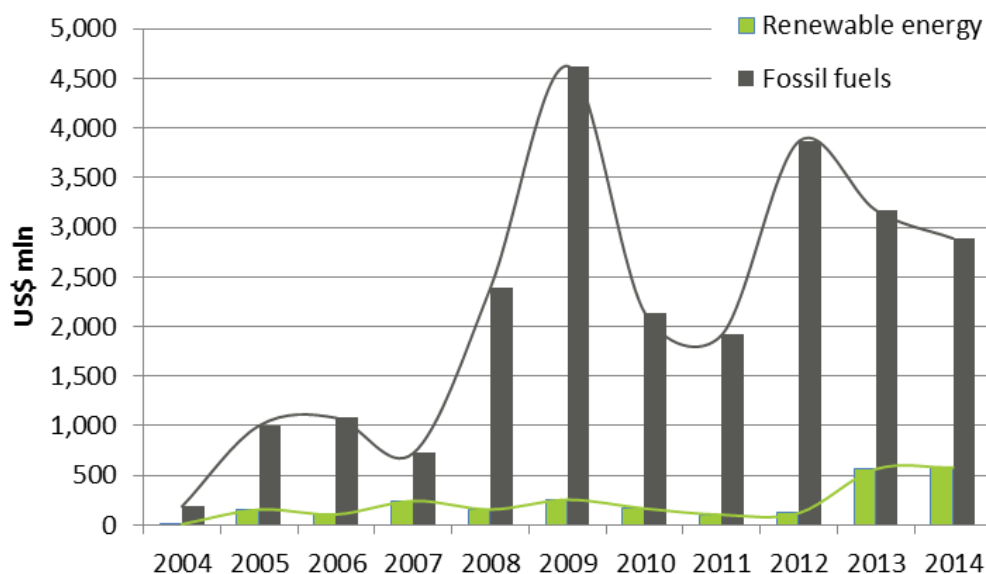
Figure 143 Crédit Agricole loans to the selected companies (2004-2014)



- **Underwriting**

Crédit Agricole's underwriting services to renewable energy increased by 108% in the second half of the period of study. Underwriting to fossil fuel, however, increased by a higher 112%. Figure 37 shows that Crédit Agricole's underwriting to renewable energy have generally fluctuated below US\$ 500 million, only rising above this figure in recent years. Underwriting to fossil fuels has generally been above US\$ 2 billion since 2008, though suffering a significant dip in 2010-2011.

Figure 144 Crédit Agricole underwriting services to the selected companies (2004-2014)

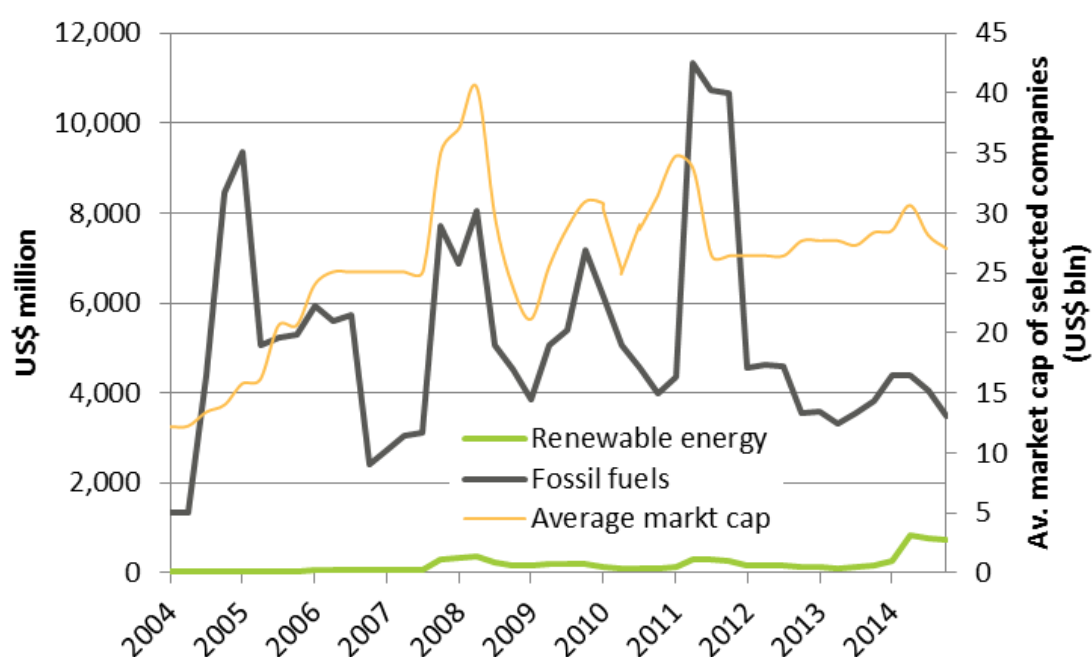


- **Shareholdings**

Total annual average investments in the shareholdings of the selected companies attributable to renewable energy increased by 95% in the second half of the period of study. Total annual average investments in selected companies attributable to fossil fuels increased by 1%. As a proportion of total shareholdings in selected companies, renewable energy increased by 1% while fossil fuels decreased by 5%.

Figure 38 shows that investments in selected companies attributable to fossil fuels generally followed the fluctuations in average market capitalization of the selected companies. Shareholdings of fossil fuels companies have been consistently above US\$ 3 billion, while investments in selected companies attributable to renewable energy have yet to rise above US\$ 850 million.

Figure 145 Crédit Agricole shareholdings in selected companies 2004-2014



7.3.4 Crédit Mutuel CIC Group

This section provides an analysis of the financing provided by the Crédit Mutuel CICI Group to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Crédit Mutuel CIC Group does not have a clear commitment on climate change, with the exception of SRI initiatives (essentially products for their retail clients). Their commitments on climate change only apply to direct emissions.

Table 63 shows that, in the second half of the period of study, Crédit Mutuel CIC Group's total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects increased by 39%. Renewable energy increased by 2% as a proportion of total loans and underwriting to the selected companies. In the same period, total loans and underwriting to the selected companies attributable to fossil fuels decreased by 24%. Fossil fuels decreased by 11% as a proportion of total loans and underwriting to the selected companies.

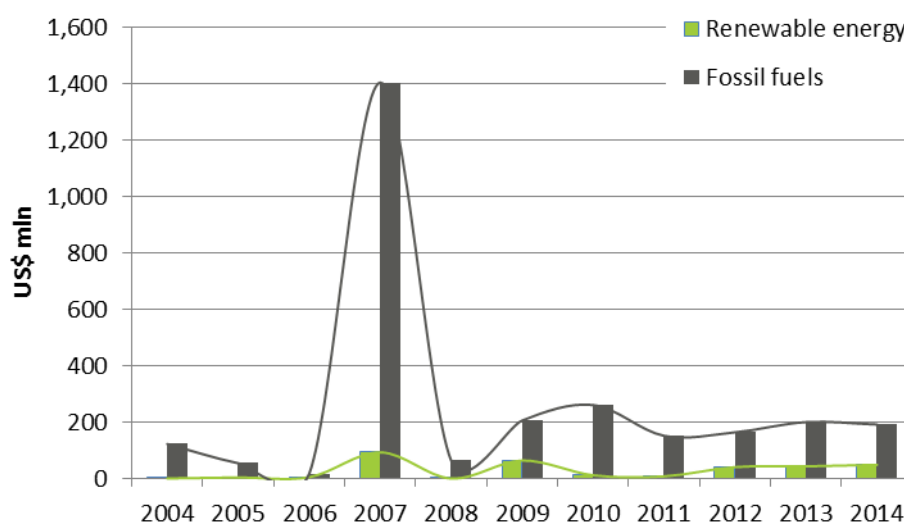
Table 63 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	39%	2%
Fossil fuels	-24%	-11%

- Loans**

Loans to the selected companies attributable to renewable energy increased by 37%. Loans to the selected companies attributable to fossil fuels decreased by 39%. Figure 146 shows that loans to the selected companies attributable to fossil fuels have always been higher than loans to the selected companies attributable to renewable energy and renewable energy projects. Loans to the selected companies attributable to fossil fuels have remained stable at just under US\$ 200 million 2011. Loans to the selected companies attributable to renewable energy, however, have not exceed US\$ 48 million.

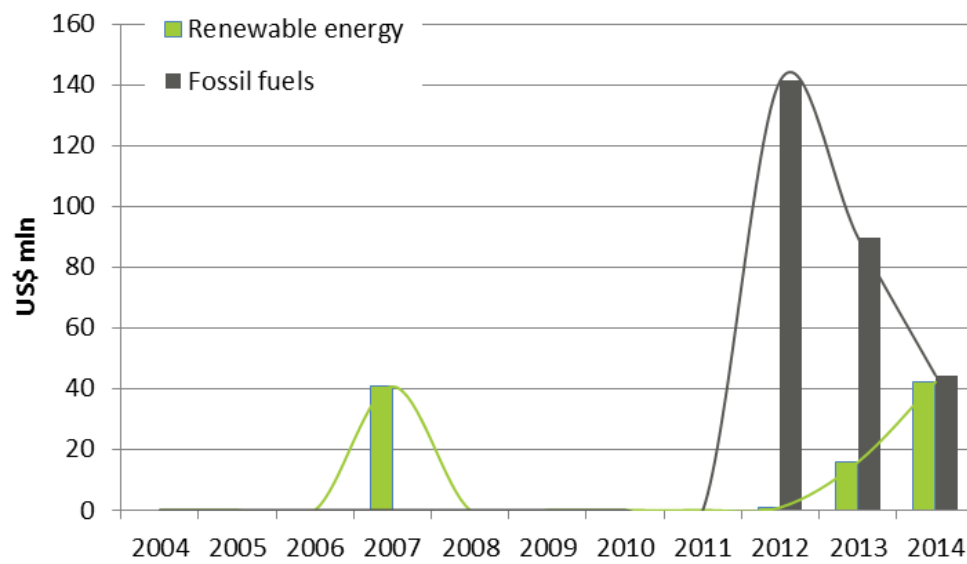
Figure 146 Crédit Mutuel CIC Group loans to the selected companies (2004-2014)



- Underwriting**

Underwriting to renewable energy, increased by 45% in second half of the period of study. This research did not identify Crédit Mutuel CIC Group as participating in underwriting to fossil fuels prior to 2012. Figure 147, however, shows that underwriting to fossil fuels immediately exceeded US\$ 40 million.

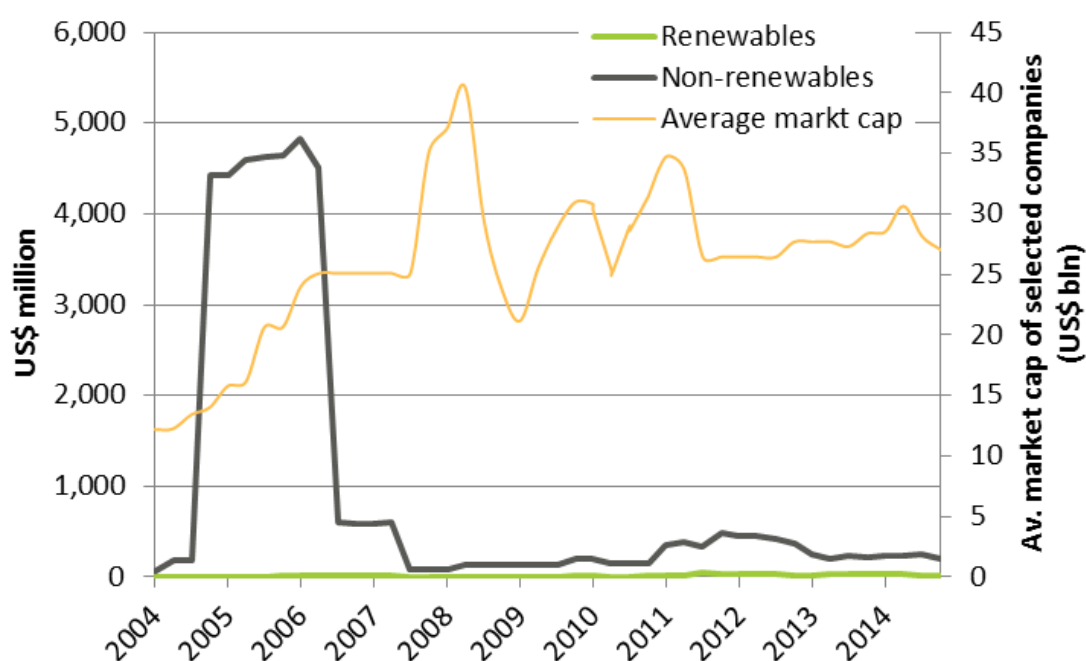
Figure 147 Crédit Mutuel CIC Group underwriting services to the selected companies (2004-2014)



- **Shareholdings**

Crédit Mutuel CIC Group average annual investments in shareholdings of the selected companies, attributable to renewable energy, increased by 232% in the second half of the period of study. Average annual investments in selected companies attributable to fossil fuels decreased by 82%. Figure 148 shows, however, that investment in fossil fuels far outstrips renewable energy. Since the sharp decline in 2007, investments in selected companies attributable to fossil fuels have fluctuated between US\$ 100 million and US\$ 500 million. Investments in selected companies attributable to renewable energy, however, have fluctuated between US\$ 1 million and US\$ 30 million.

Figure 148 Crédit Mutuel CIC Group shareholdings in selected companies 2004-2014



7.3.5 Société Générale

This section provides an analysis of the financing provided by Société Générale to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Société Générale has signed the Climate Principles and is a participant in the Carbon Disclosure Project.

Table 33 shows that total loans and underwriting attributable to renewable energy by Société Générale increased by 143%. Total loans and underwriting to the selected companies attributable to fossil fuels decreased by 1% in the second half of the period of study. Of the total loans and underwriting to the selected companies, the proportion attributable to renewable energy increased by 5%, while the proportion attributable to fossil fuels decreased by 2%.

Table 64 Percentage Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

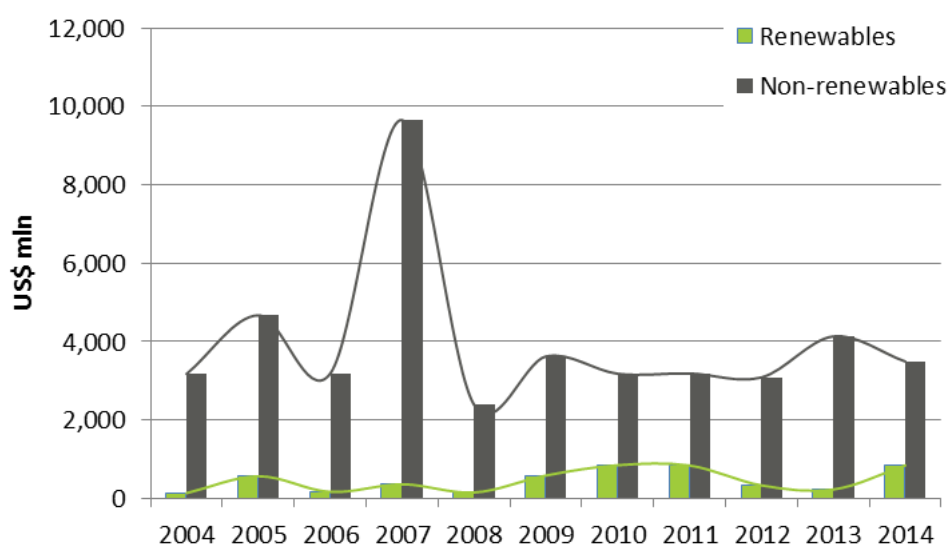
Energy source	Percent change	Proportion change
---------------	----------------	-------------------

Energy source	Percent change	Proportion change
Renewable energy	143%	5%
Fossil fuels	-1%	-2%

- **Loans**

Loans to the selected companies attributable to renewable energy increased by 101% in the second half of the period of study. Loans to the selected companies attributable to fossil fuels, on the other hand, decreased by 24%. Figure 72 shows that throughout the period of study loans to the selected companies attributable to renewable energy never exceed US\$ 1 billion. Loans to the selected companies attributable to fossil fuels hardly ever fell below US\$ 3 billion annually.

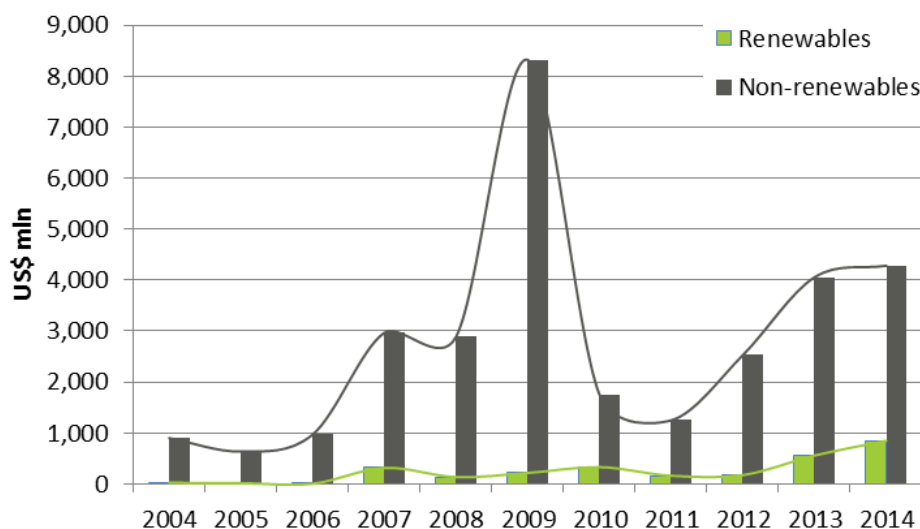
Figure 149 Société Générale loans to the selected companies (2004-2014)



- **Underwriting**

Underwriting to renewable energy increased by 259%, while underwriting to fossil fuels by 44%. Figure 73 shows that underwriting to fossil fuels peaked in 2009 over US\$ 8 billion. Underwriting to fossil fuels has generally been over US\$ 2 billion throughout the period of study. Underwriting to renewable energy generally fluctuated between US\$ 150 million and US\$ 350 million. There is, however, a general upward trend since 2012, peaking at US\$ 850 million in 2014.

Figure 150 Société Générale underwriting services to the selected companies (2004-2014)

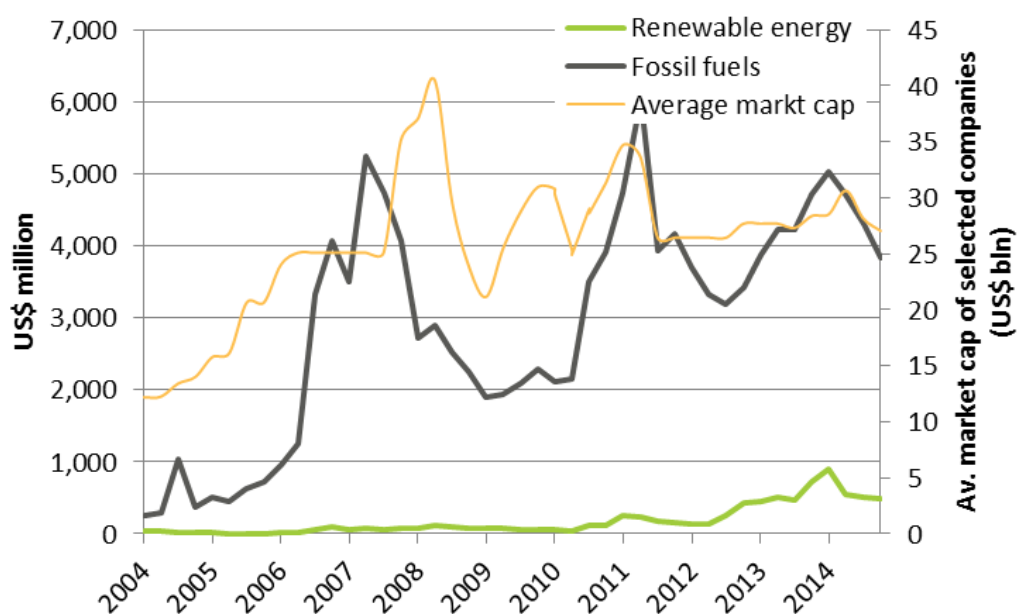


- Shareholdings**

Average annual shareholdings attributable to renewable energy increased by 464% in the second half of the period of study to US\$ 295 million. Average annual investment's in fossil fuels, however, also increased by 81%. As a proportion of total shareholdings, shareholdings attributable to renewable energy increased by 4%, while the proportion attributable to fossil fuels decreased by 3%.

Average annual investments attributable to renewable energy have generally not exceeded US\$ 500 million. However in the first quarter of 2014, they almost reached US\$ 1 billion before falling again. Throughout the most part of the period of study shareholdings attributable to fossil fuels have exceeded US\$ 2billion.

Figure 151 Société Générale shareholdings in selected companies 2004-2014

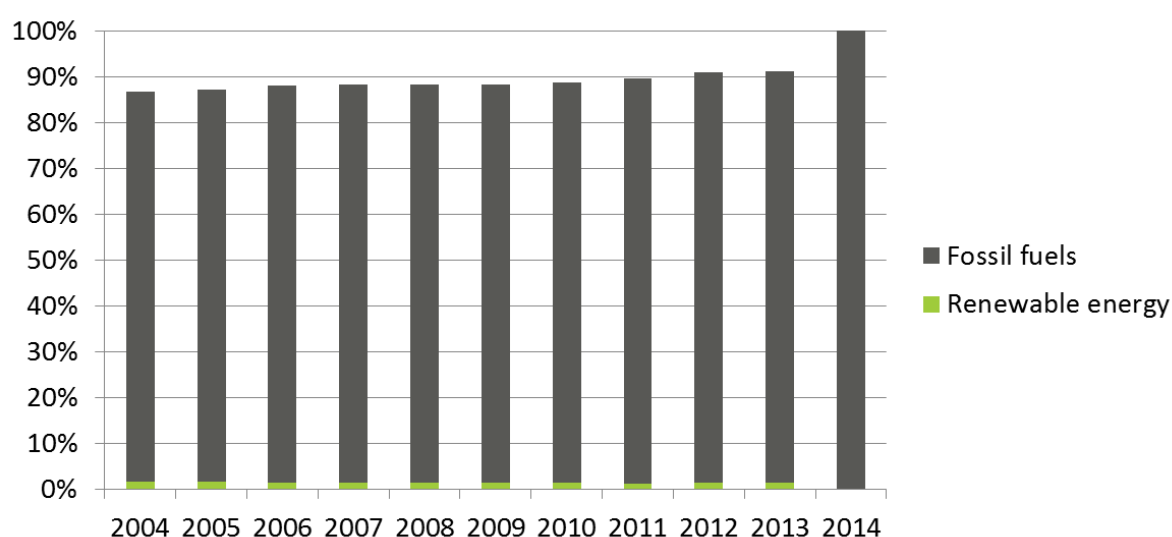


Chapter 8 Indonesia

This chapter outlines the trends in financing of the 11 selected financial institutions active in Indonesia towards the selected companies attributable to fossil fuels (coal mining and oil & gas), renewable energy input equipment manufacturers (solar panels, concentrated solar power plants, wind turbine manufacturers, and geothermal power turbine and engineering companies), renewable energy projects, and utility companies, over the period 2004-2014.

Figure 152 provides an overview of the installed capacity composition of the selected utility companies active in Indonesia. It is clear that, throughout the period of study, renewable energy only composed a minor share of the total installed capacity of the selected utility companies active in Indonesia. The vast majority of the installed capacity is fossil fuels.

Figure 152 Annual portfolio proportions of researched utility companies active in Indonesia



8.1 Loans and underwriting

This section provides an analysis of the loans and underwriting provided by financial institutions active in Indonesia to the selected companies and renewable energy projects. Section 8.1.1 provides an outline of the annual changes in the financing to the selected companies. Section 8.1.2 ranks the financial institutions active in Indonesia according to their financing of fossil fuels.

8.1.1 Annual analysis

Figure 153 provides an overview of the changes in loans provided to renewable energy and fossil fuels by the financial institutions active in Indonesia. There was a spike in loans to the selected companies attributable to fossil fuels in 2006, followed by a rapid decline until 2009. This was likely due to the global financial crisis, and a significant reduction in fuel subsidies in Indonesia in 2008. After 2009 there has been a steady increase in loans to the selected companies attributable to fossil fuels by financial institutions active in Indonesia. From 2006 there was an increase in financing to renewable energy. However, there seems to be a decrease in loans to the selected companies attributable to renewable energy since 2013. Notable, also, is the large difference in total value of loans to the selected companies attributable to renewable energy and to fossil fuels.

Figure 153 Annual loans provided by financial institutions active in Indonesia to the selected companies

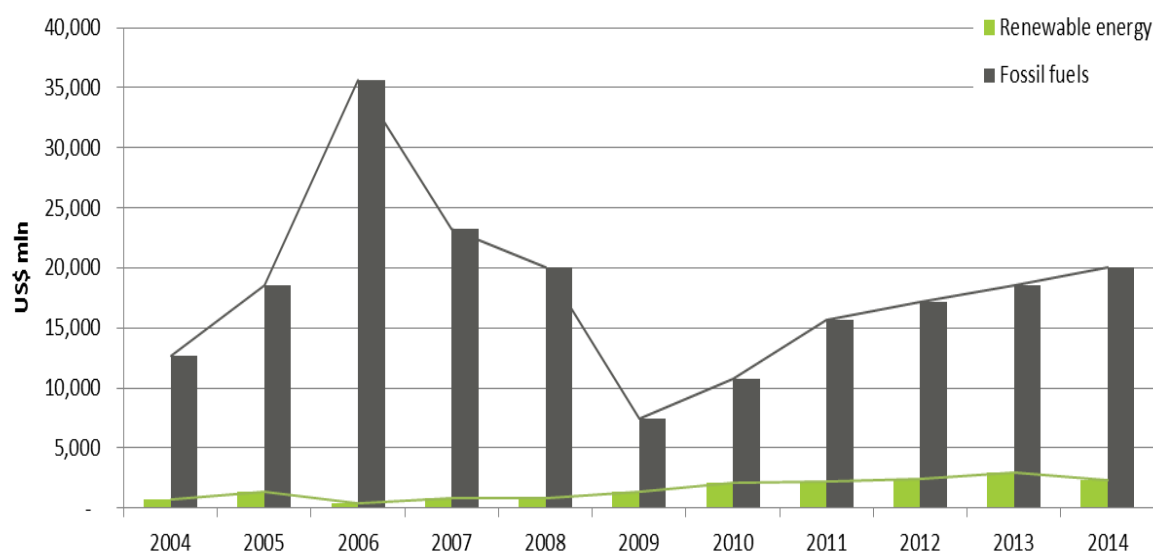
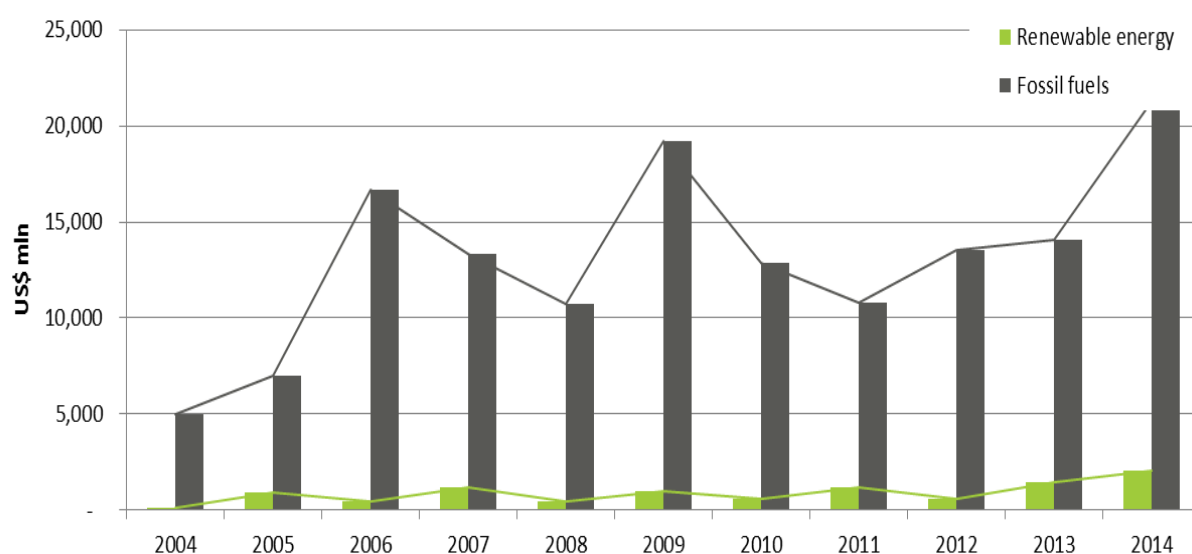


Figure 154 shows the underwriting of the selected financial institutions active in Indonesia for selected companies. Underwriting to fossil fuels has fluctuated throughout the period of study. However, there seems to be a general upward trend. Underwriting for renewable energy has also fluctuated throughout the period of study. Since 2012, there seems to be an upward trend in financing for renewable energy. As with loans, there is a pronounced difference in the levels of underwriting for renewable energy and fossil fuels.

Figure 154 Annual underwriting services provided by financial institutions active in Indonesia to the selected companies



8.1.2 Rankings

This section provides a ranking of the financial institutions active in Indonesia in terms of the value of their loans and underwriting services to the selected companies attributable to fossil fuels. Figure 155 shows the ranking of the top financiers of the selected companies attributable to fossil fuels for the period 2009 to 2014. Zooming in on the most recent five years provides a more current picture of the financial activities of the selected financial institutions with regard to their financing of the selected companies attributable to fossil fuels and renewable energy. The top three places are all occupied by large foreign financial institutions. In the period 2009 to 2014, Citigroup, Mitsubishi UFJ Financial and HSBC each provided well over US\$ 35 billion to the selected companies attributable to fossil fuels. In the same period they only provided between US\$ 4.8 billion and US\$ 7.5 billion in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects.

Figure 155 Ranking of the top financiers of the selected companies attributable to fossil fuels (loans & underwriting, US\$ mln, 2009-2014)

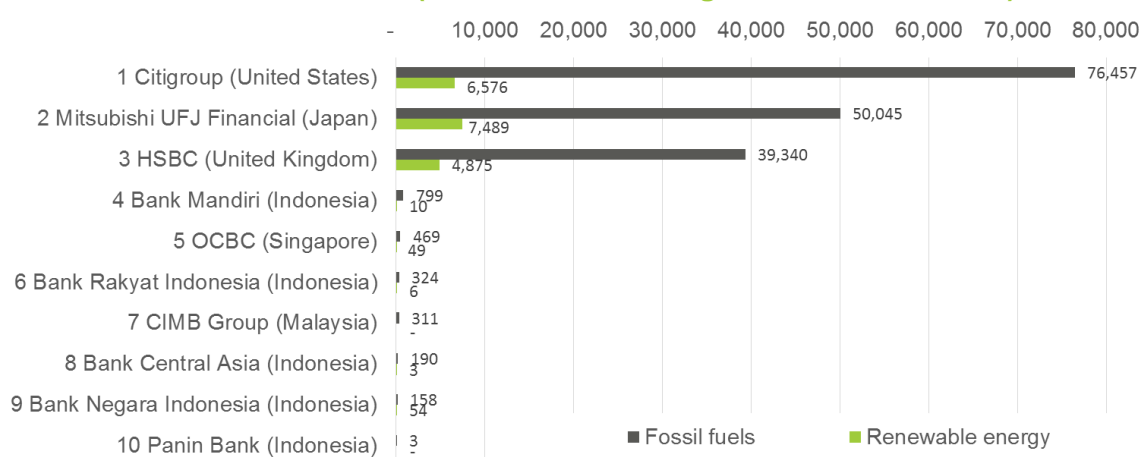


Table 65 provides an overview of the loans and underwriting to the selected companies attributable to fossil fuels and renewable energy. It shows that for 9 of the 10 financial institutions active in Indonesia the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels was higher than 80%. For 7 this proportion was over 90%. For two financial institutions, CIMB Group and Panin Bank, this proportion was 100%. This indicates the huge disparity between the financing of renewable energy and fossil fuels.

Table 65 also shows the percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Half of the researched financial institutions active in Indonesia decreased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). However, these decreases were on the whole very small, not exceeding 9%. Two financial institutions marginally increased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014).

Table 65 Overview of loans and underwriting to the selected companies attributable to fossil fuels and renewable energy, and renewable energy projects (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Citigroup	United States	76,457	6,576	92%	-3%
Mitsubishi UFJ Financial	Japan	50,045	7,489	87%	-9%
HSBC	United Kingdom	39,340	4,875	89%	-6%
Bank Mandiri	Indonesia	799	10	99%	0%
OCBC	Singapore	469	49	90%	-8%
Bank Rakyat Indonesia	Indonesia	324	6	98%	0%
CIMB Group	Malaysia	311	-	100%	1%
Bank Central Asia	Indonesia	190	3	98%	n/a
Bank Negara Indonesia	Indonesia	158	54	74%	3%
Panin Bank	Indonesia	3	-	100%	0%
Total		168,097	19,061	90%	-6%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

8.2 Shareholdings

This section provides an analysis of the investments in shareholdings by financial institutions active in Indonesia in the selected companies. Section 8.2.1 provides an outline of the annual changes in the investments in selected companies. Section 8.2.2 ranks the financial institutions active in Indonesia according to their investments in selected companies attributable to fossil fuels.

8.2.1 Annual analysis

Figure 156 shows that the average investments in selected companies, attributable to fossil fuels, generally followed the fluctuations in the average market capitalization of the selected companies. However, for the period 2005-2008 the exceeded the trendlines.

Figure 156 Annual investments by financial institutions active in Indonesia in selected companies

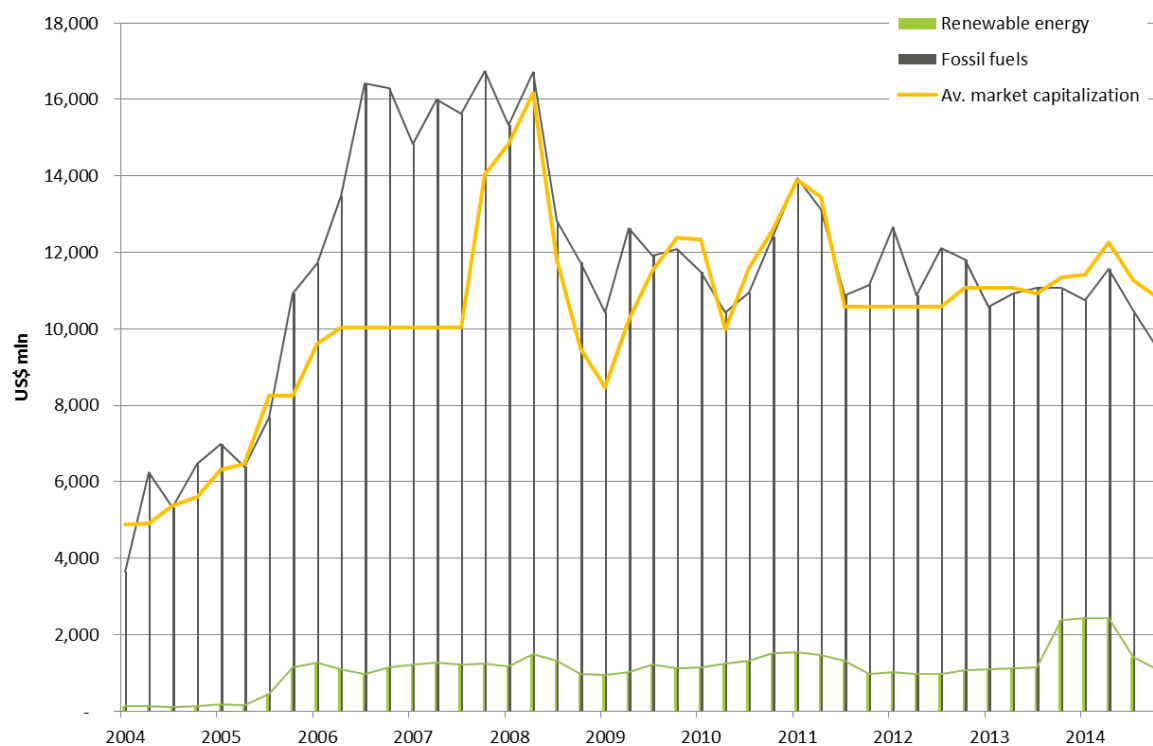


Table 66 shows the large difference between investments in selected companies attributable to renewable energy and investments in selected companies attributable to fossil fuels.

Table 66 Average annual investments in selected companies attributable to renewable energy (US\$ mln)

Year	Renewable energy	Fossil fuels
2004	119	5,424
2005	477	7,995
2006	1,122	14,478
2007	1,237	15,802
2008	1,242	14,147
2009	1,075	11,767
2010	1,305	11,318
2011	1,327	12,266
2012	1,013	11,861
2013	1,433	10,907
2014	1,843	10,574

Table 67 shows that on average, in the period 2004-2014, financial institutions active in Indonesia invested 6% of their total investments in selected companies in renewable energy and 63% in fossil fuels. As of 2006 there seems to be an upward trend in the proportion of average investments in selected companies attributable to renewable energy and renewable energy projects. However, the proportion attributable to fossil fuels also seems to be growing.

Table 67 Average annual % investment in renewable energy

Year	Renewable energy	Fossil fuels
2004	1%	47%
2005	3%	44%
2006	3%	41%
2007	5%	66%
2008	6%	71%
2009	6%	71%
2010	8%	65%
2011	7%	69%
2012	6%	74%
2013	10%	73%
2014	13%	72%
Average	6%	63%

8.2.2 Rankings

This section provides a ranking of the financial institutions active in Indonesia in terms of the value of their investments attributable to fossil fuels. Figure 157 provides a ranking of the top financial institutions active in Indonesia on the basis of their average annual investments in the selected companies attributable to fossil fuels in the period 2009-2014. Large foreign financial institutions occupy the top three positions with the highest average annual investments in selected companies attributable to fossil fuels. HSBC and Mitsubishi invested on average more than US\$ 4 billion in fossil fuels annually in the period 2009-2014.

Figure 157 also shows the large gap between average annual investments in selected companies attributable to fossil fuels and renewable energy. Only one financial institution had an average annual investment in renewable energy of over US\$ 1 billion, Mitsubishi UFJ Financial. The largest investor in fossil fuels, HSBC, only had an annual investment in renewable energy of US\$ 99 million in the period 2009-2014.

Figure 157 Ranking of the top average annual investors in the selected companies attributable to fossil fuels (US\$ mln, 2009-2014)

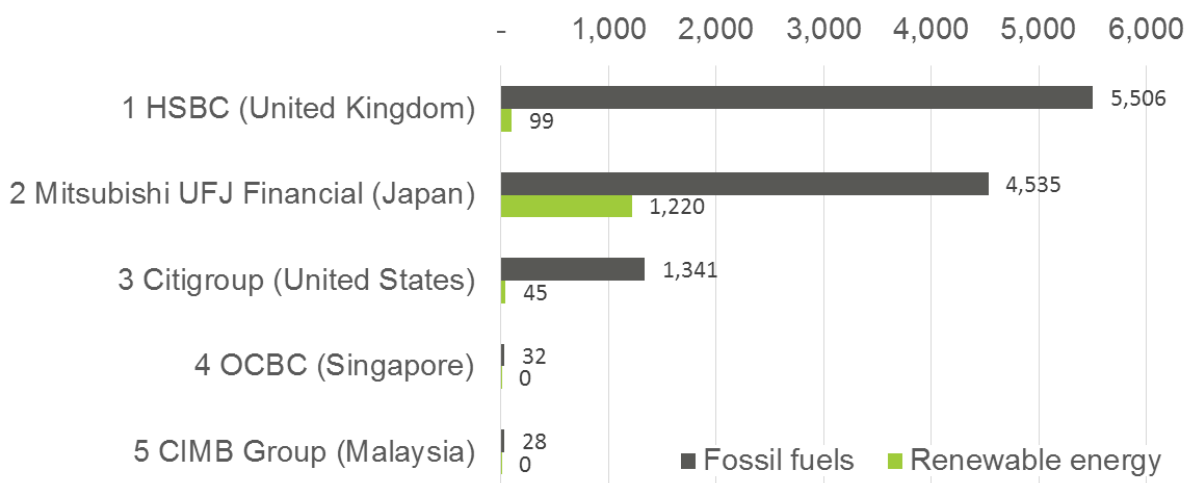


Table 68 provides an overview of the investments in the selected companies attributable to fossil fuels and renewable energy. It shows that for four of the five financial institutions active in Indonesia the proportion of fossil fuels in the total investments in the selected companies attributable to renewable energy and fossil fuels was higher than 90%. For 17 this proportion was over 95%. For one financial institution this proportion was essentially 100%. This indicates the huge disparity between the financing of renewable energy and fossil fuels.

Table 68 also shows the change in the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in the investments in the selected companies attributable to renewable energy and fossil fuels. Three financial institutions marginally decreased the proportion of fossil fuels in the investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). However, these decreases were very small, not exceeding 3 percentage points. One financial institution marginally increased the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014).

Table 68 Overview of shareholdings in the selected companies attributable to fossil fuels and renewable energy (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
HSBC	United Kingdom	5,506	99	98%	0%
Mitsubishi UFJ Financial	Japan	4,535	1,220	79%	-3%
Citigroup	United States	1,341	45	97%	-2%
OCBC	Singapore	32	0	99%	-1%
CIMB Group	Malaysia	28	0	100%	3%
Total		11,442	1,364	89%	-4%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

8.3 Financial institution analysis

This section provides an analysis of the changes in values of loans, underwriting services and investments in shares in selected companies that can be attributed to renewable energy and fossil fuels individually for the financial institutions active in Indonesia. The sub-sections are ordered alphabetically by bank name.

8.3.1 Bank Central Asia

This section provides description of the financing provided by Bank Central Asia to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Bank Central Asia has not expressed any commitments regarding climate change mitigation.

This research did not identify sufficient data regarding Bank Central Asia's financing of renewable energy and fossil fuels in order to make a comparison between different periods.

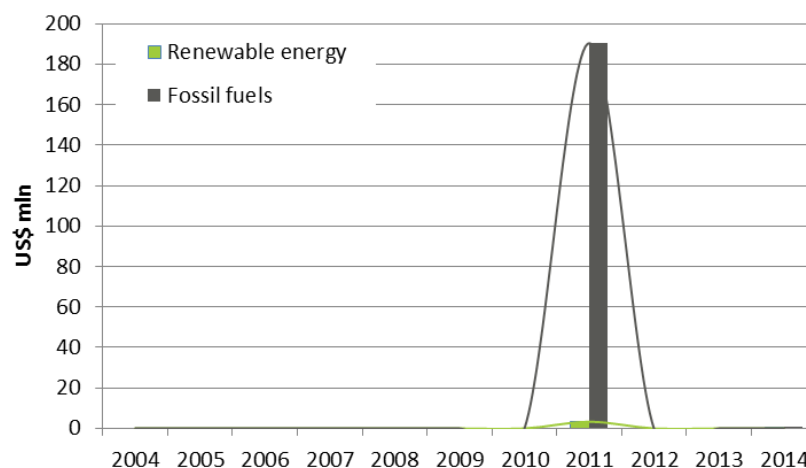
Table 69 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	n/a	n/a
Fossil fuels	n/a	n/a

- **Loans**

Figure 158 shows that in 2011 loans to the selected companies attributable to fossil fuels reached US\$ 190 million. Loans to the selected companies attributable to renewable energy, only reached US\$ 3 million.

Figure 158 Bank Central Asia loans to the selected companies (2004-2014)



- **Underwriting**

This research did not identify any underwriting services provided by Bank of Central Asia to the selected companies.

- **Shareholdings**

This research did not identify any investments by Bank Central Asia in shares of the selected companies.

8.3.2 Bank Danamon Indonesia

This research did not identify any financial relationships between Bank Danamon Indonesia and the selected companies.

8.3.3 Bank Mandiri

This section provides description of the financing provided by Bank Mandiri to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In 2010, Bank Mandiri was appointed receiver of climate change loans from Agence Française de Développement (AFD) to "... finance[e] projects tackling climate change issues and implemented by public or private companies. It provides the bank with the appropriate resources, in order to encourage investments in energy management: energy efficiency and renewable energies."¹³⁰

Table 70 shows that Bank Mandiri increased its total loans and underwriting services to renewable energy to renewable energy by 126% in the second half of the period of study. Loans and underwriting to the selected companies attributable to fossil fuels, however, increased by 156%. The proportion of total loans and underwriting attributable to renewable energy remained the same. The proportion attributable to fossil fuels decreased by 3%.

130 Bank Mandiri (2010, October 19), "Independent bank credit distribution push for industrial development environmentally friendly", online: http://ir.bankmandiri.co.id/phoenix.zhtml?c=146157&p=irol-newsArticle_print&ID=1484680, viewed in September 2015.

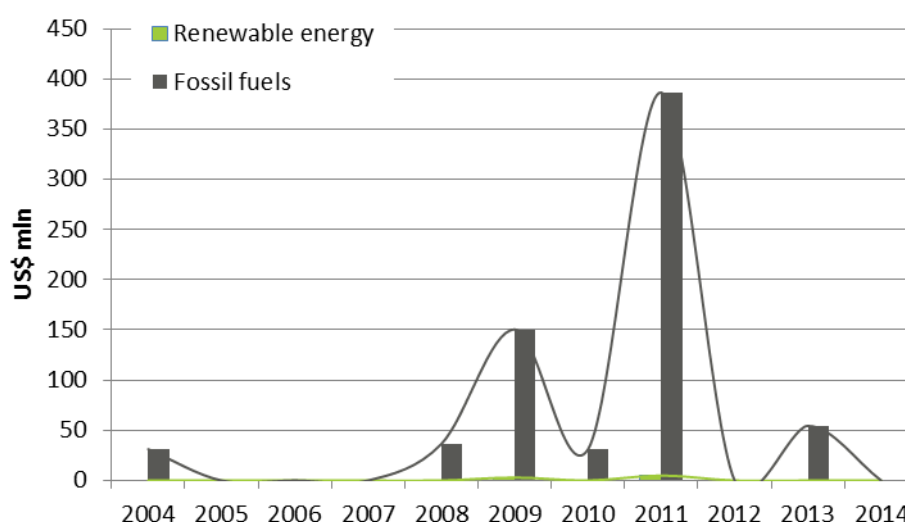
Table 70 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	126%	0%
Fossil fuels	156%	-3%

- Loans**

Loans to the selected companies attributable to renewable energy increased by 341% in the second half of the period of study. This increase was from US\$ 1.4 million to US\$ 6.4 million. Loans to the selected companies attributable to fossil fuels increased by 283%, from US\$ 143 million to US\$ 547. Figure 159 shows that the majority of Bank Mandiri's loans to the selected companies attributable to fossil fuels occurred after 2009.

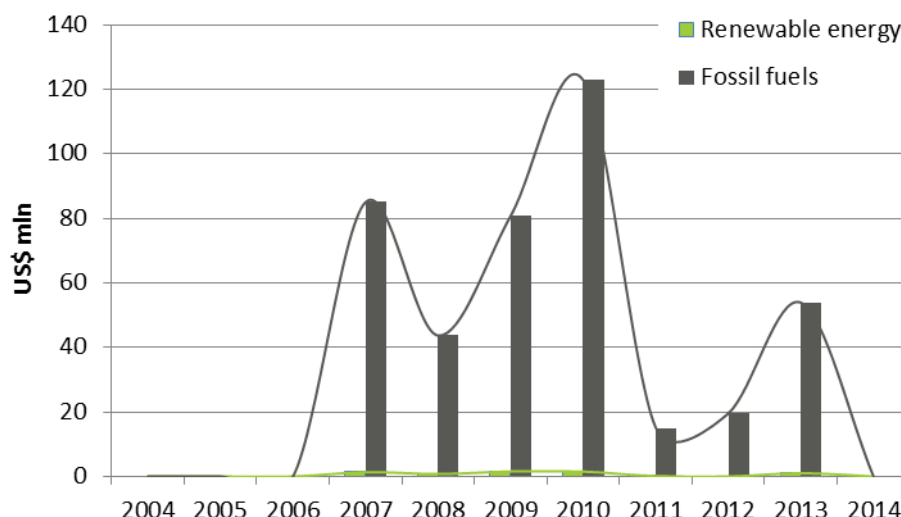
Figure 159 Bank Mandiri loans to the selected companies (2004-2014)



- Underwriting**

Bank Mandiri's underwriting for renewable energy increased by 19% in the second half of the period of study. The increase was from US\$ 2.9 million to US\$ 3.5 million. Underwriting for fossil fuels increased by 49%. Underwriting for fossil fuels increased from US\$ 169 million to US\$ 251 million. Figure 160 shows that the majority of Bank Mandiri's loans to the selected companies attributable to fossil fuels occurred after 2009. There seems to be a decline in underwriting to fossil fuels in recent years.

Figure 160 Bank Mandiri underwriting services to the selected companies (2004-2014)



- Shareholdings**

This research did not identify any investments by Bank Mandiri in the shares of the selected companies.

8.3.4 Bank Negara Indonesia

This section provides description of the financing provided by Bank Negara Indonesia to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

BNI joined as a signatory of UNEP FI in December 2005.¹³¹

Table 71 shows that Bank Negara Indonesia provided 18% more loans and underwriting to the selected companies attributable to fossil fuels in the second half of the period of study than the first. As a proportion of total loans and underwriting, renewable energy decreased by 8% and fossil fuels by 12% due to the increase in proportion for 'other'.

Table 71 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

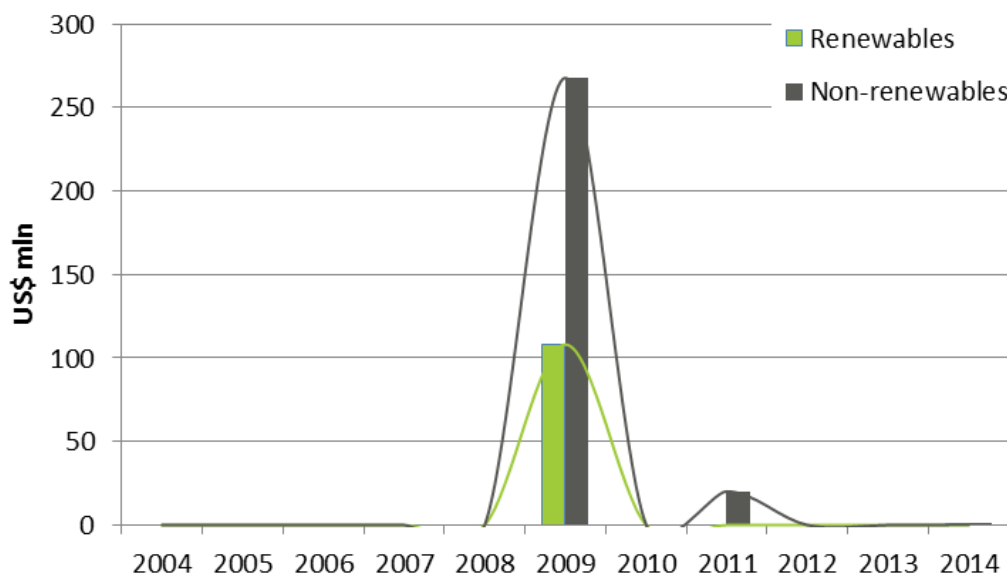
Energy source	Percent change	Proportion change
Renewable energy	n/a	-8%
Fossil fuels	18%	-12%

- Loans**

131 Bank Negara Indonesia (2011, May), *Sustainability Report 2010*.

Figure 161 shows that Bank Negara Indonesia provided loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels in 2009. These values are split between the first and second halves of the period of study.

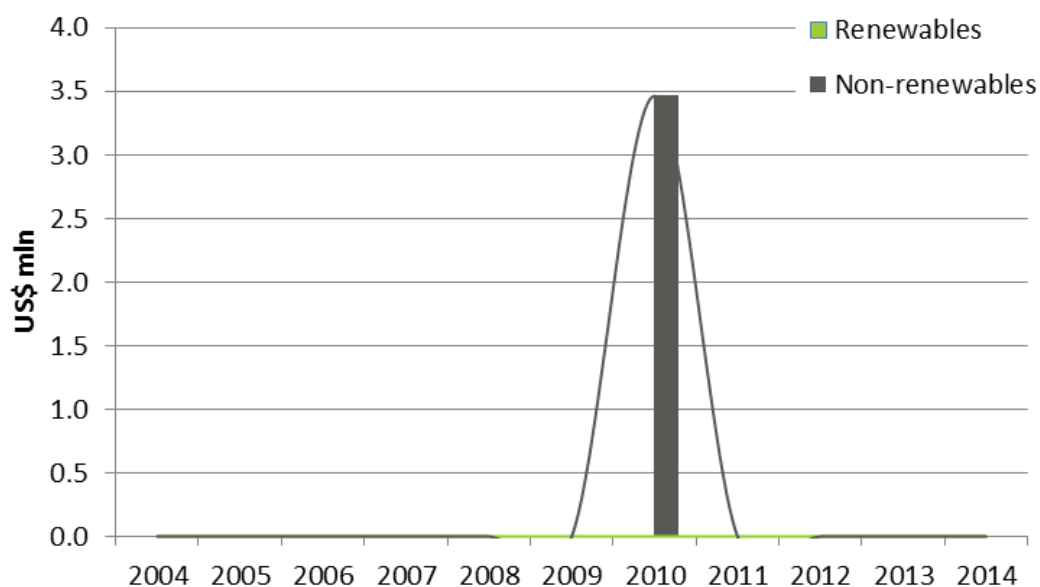
Figure 161 Bank Negara Indonesia loans to the selected companies (2004-2014)



- **Underwriting**

Figure 162 shows that Bank Negara Indonesia provided underwriting services to the selected companies attributable to fossil fuels in 2010. No underwriting was provided to renewable energy.

Figure 162 Bank Negara Indonesia underwriting services to the selected companies (2004-2014)



- **Shareholdings**

This research did not identify any investments by Bank Negara Indonesia in the shares of the selected companies.

8.3.5 Bank Rakyat Indonesia

This section provides description of the financing provided by Bank Rakyat Indonesia to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Bank Rakyat Indonesia does not have specific climate investment target.

Table 72 shows that, in the second half of the period of study, Bank Rakyat Indonesia increased its total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects by 128%. This increase was from US\$ 2.5 million to US\$ 5.8 million. Loans and underwriting to the selected companies attributable to fossil fuels increased by 142%. The proportion of total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects remained constant. The proportion of total loans and underwriting to the selected companies attributable to fossil fuels decreased by 1%.

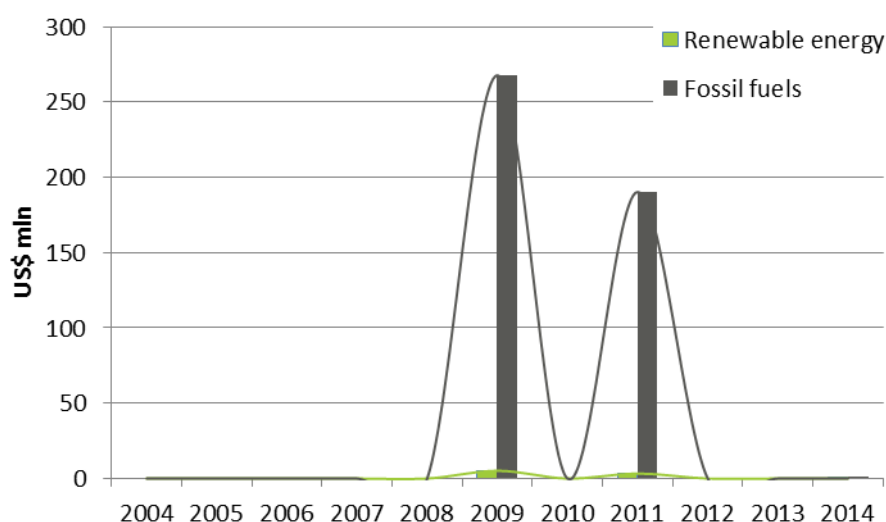
Table 72 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	128%	0%
Fossil fuels	142%	-1%

- **Loans**

The increases and proportion changes described above apply to Bank Rakyat Indonesia loans. This research did not identify Bank Rakyat Indonesia participating in any underwriting to the selected companies or renewable energy projects.

Figure 163 Bank Rakyat Indonesia loans to the selected companies (2004-2014)



- **Underwriting**

This research did not identify any underwriting services provided by Bank Rakyat Indonesia to the selected companies.

- **Shareholdings**

This research did not identify any investments by Bank Rakyat Indonesia in the shares of the selected companies.

8.3.6 CIMB Group

This section provides description of the financing provided by CIMB Group to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

CIMB Asset Management launched CIMB Principal Climate Change Equity Fund in 2007.¹³²

Table 73 shows that in the second half of the period of study loans and underwriting to the selected companies attributable to renewable energy decreased by 100%. Loans and underwriting to the selected companies attributable to fossil fuels, on the other hand, increased by 102%. As a proportion of total loans and underwriting, renewable energy decreased by 1%. The proportion of total loans and underwriting attributable to fossil fuels increased by 13%.

Table 73 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	-100%	-1%

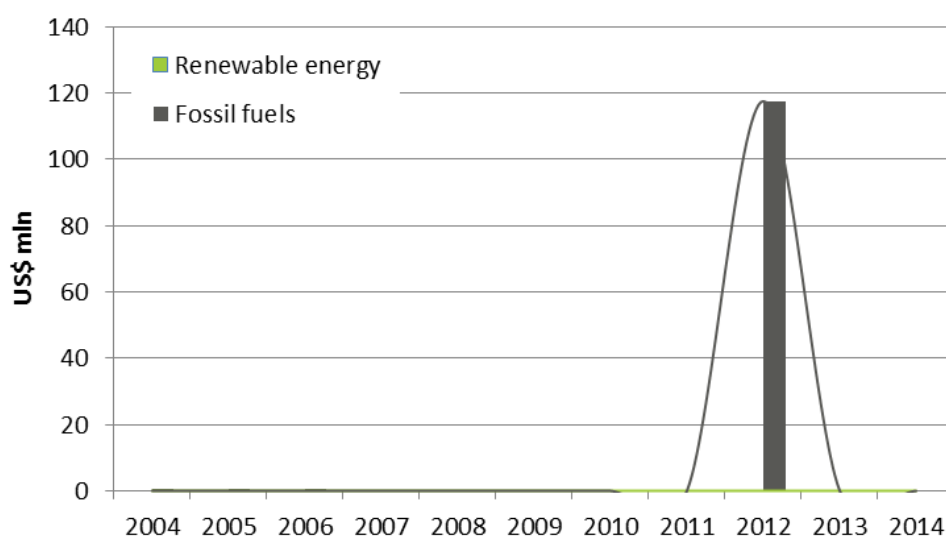
¹³² CIMB (n.d.), "CIMB-Principal Climate Change Equity Fund", online: http://www.cimb-principal.com.my/cimbFunds_CIMB-Principal_Climate_Change_Equity_Fund.aspx#, viewed September 2015.

Energy source	Percent change	Proportion change
Fossil fuels	102%	13%

- **Loans**

Through the period of study, CIMB did not provide any loans to the selected companies attributable to renewable energy and renewable energy projects. Loans attributable to fossil fuels increased by 94,484% from US\$ 0.1 million in the first half of the period of study, to US\$ 118 million in the second half, all in 2012 (see Figure 164).

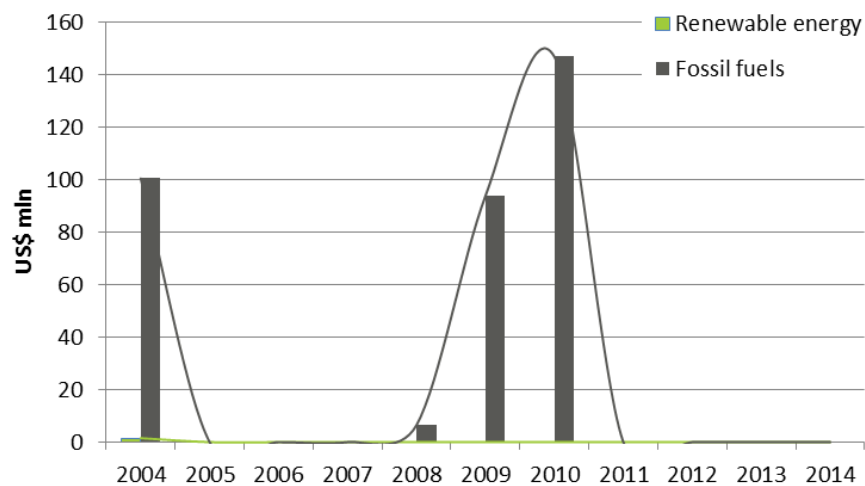
Figure 164 CIMB Group loans to the selected companies (2004-2014)



- **Underwriting**

Underwriting to renewable energy decreased by 100% in the second half of the period of study as no underwriting services to the selected companies attributable to renewable energy were provided. Underwriting to fossil fuels increased by 26%. Figure 165 provides a more detailed overview of the underwriting services provided by CIMB Group throughout the period of study.

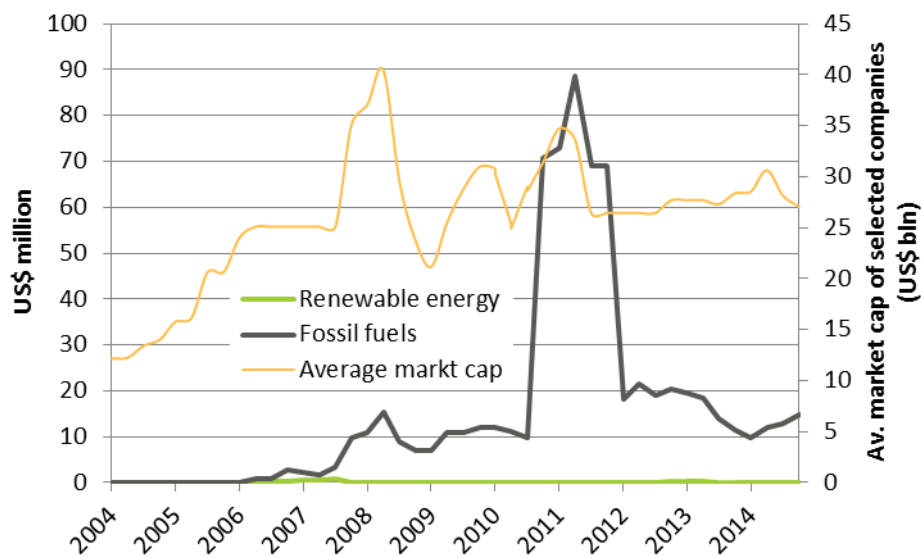
Figure 165 CIMB Group underwriting services to the selected companies (2004-2014)



• Shareholdings

CIMB Group’s average annual shareholdings in selected companies, attributable to renewable energy, decreased by 37% in the second half of the period of study. Investments in selected companies attributable to renewable energy fluctuated between US\$ 20,000 and US\$ 80,000. Average investments in selected companies attributable to fossil fuels increased by 569% in the second half of the period of study. After peaking in 2011, they have declined and fluctuated between US\$ 10 million and US\$ 20 million.

Figure 166 CIMB Group shareholdings in selected companies 2004-2014



8.3.7 Citigroup

This section provides description of the financing provided by Citigroup to the selected companies that can be attributed to renewable energy and fossil fuels.

In May 2007 “the bank announced a 10-year, \$50 billion initiative to address global climate change through investments, financings and related activities that support the commercialization and growth of alternative energy and clean technology in markets around the world...”¹³³

In February 2015, Citi announced the “\$100 Billion Environmental Finance Initiative: Citi will lend, invest and facilitate \$100 billion over 10 years (2014-2023) towards activities that reduce the impacts of climate change and create environmental solutions that benefit people and communities. This goal is in addition to our previous \$50 billion climate finance goal, which we met three years early in 2013.” Citi’s previous \$50 billion goal was announced in 2007 and was met three years early in 2013.¹³⁴

Table 74 shows the Citigroup’s total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects increased by 34% in the second half of the period of study. Loans and underwriting to the selected companies attributable to fossil fuels, however, decreased. In terms of the proportion of total loans and underwriting services to the selected companies attributable to renewable energy, there was a 3% increase in the second half of the period of study. The proportion of loans and underwriting attributable to fossil fuels remained the same. It thus appears that Citigroup’s commitments had an effect on its financing to renewable energy.

Table 74 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	34%	3%
Fossil fuels	-25%	0%

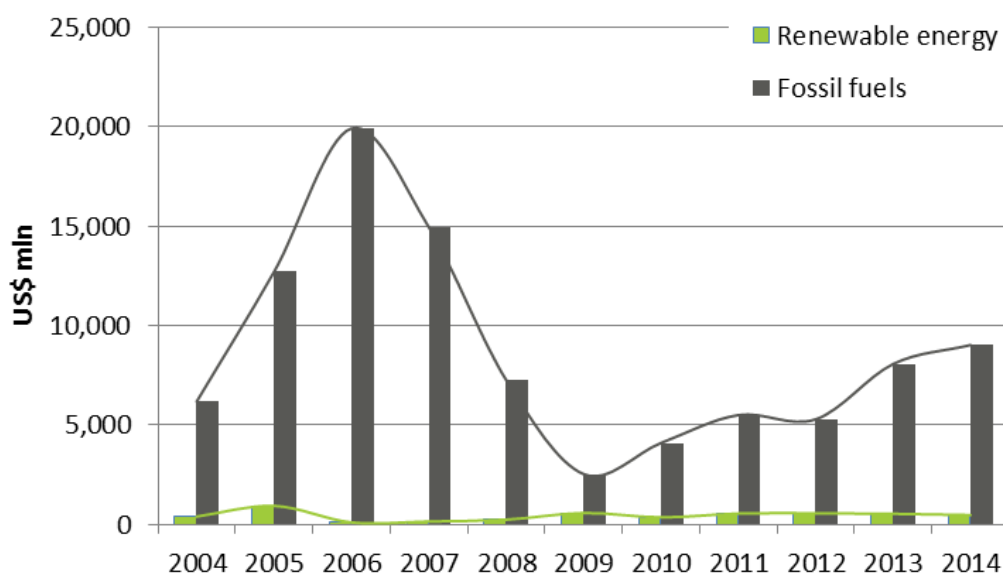
- **Loans**

Citigroup’s loans to the selected companies attributable to renewable energy increased by 30% in the second half of the period of study. Loans to the selected companies attributable to fossil fuels decreased by -47%. Figure 33 provides a more detailed overview of the changes in Citigroup’s loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Loans to the selected companies attributable to fossil fuels decreased sharply during the global economic crisis. They have since been gradually increasing. Loans to the selected companies attributable to renewable energy have been consistently low, hardly ever reaching more than US\$ 500 million. Since 2009 loans to the selected companies attributable to renewable energy have fluctuated around the US\$ 500 million mark.

133 Citigroup (2010, October 14), “Citi wins ‘Most Innovative Investment Bank for Climate Change and Sustainability’ award from The Banker magazine for the second year”, online: <http://www.citi.com/citi/press/2010/101018c.htm>, viewed in September 2015.

134 Citigroup (2015, February 18), “Citi announces \$100 billion, 10-year commitment to finance sustainable growth”, online: <http://www.citigroup.com/citi/news/2015/150218a.htm>, viewed in September 2015.

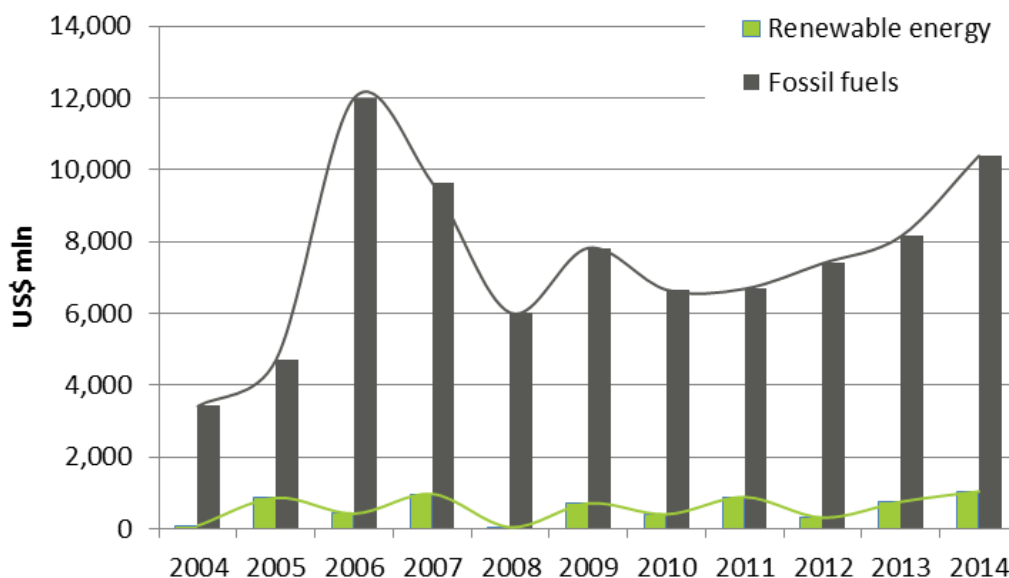
Figure 167 Citigroup loans to the selected companies (2004-2014)



- **Underwriting**

Citigroup provided 37% more underwriting services to the selected companies attributable to renewable energy in the second half of the period of study than in the first. Underwriting to fossil fuels, however, also increased by 9%. Figure 34 shows that underwriting to renewable energy generally fluctuated between US\$ 400 million and US\$ 900 million. While these figures might seem high, they pale in comparison to the underwriting services provided to the selected companies attributable to fossil fuels. Although underwriting to fossil fuels was affected by the economic crisis, they have been consistently above US\$ 6 billion since 2006. Underwriting to fossil fuels has shown a concerning upward trend since 2010.

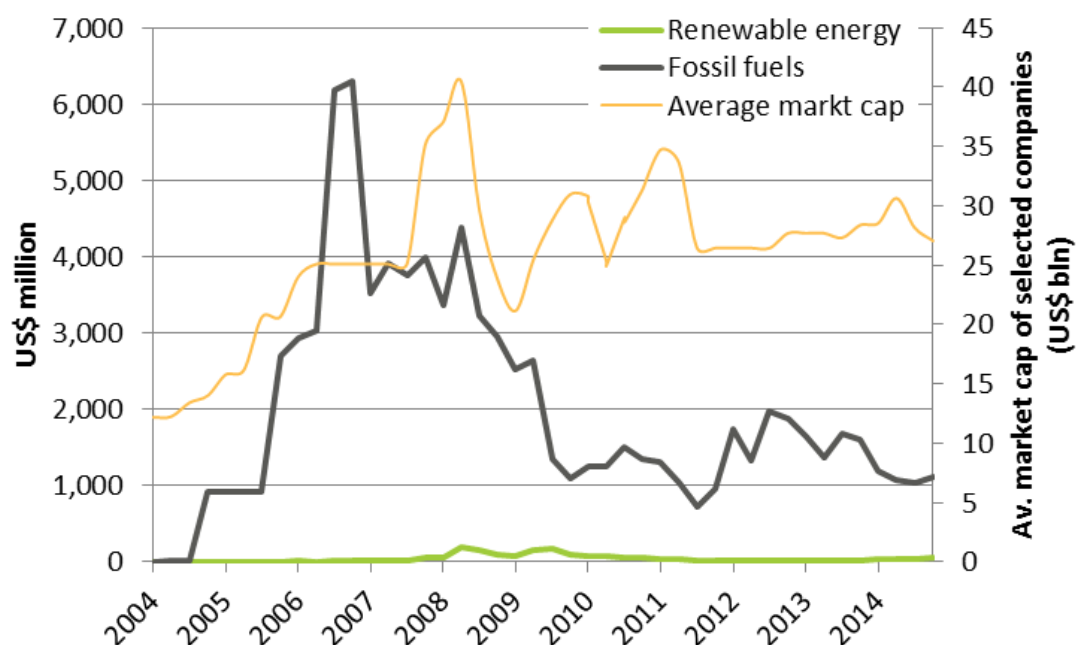
Figure 168 Citigroup underwriting services to the selected companies (2004-2014)



- **Shareholdings**

Citigroup's average annual investments in selected companies attributable to renewable energy decreased in the second period of study by 13%. Average annual investments attributable fossil fuels also decreased by 47%. Figure 35 shows that average annual investments in selected companies attributable to renewable energy were consistently low, hardly ever exceeding US\$ 100 million. Average annual investments in selected companies attributable to fossil fuels have generally been over US\$ 1 billion throughout the period of study.

Figure 169 Citigroup shareholdings in selected companies 2004-2014



8.3.8 HSBC

This section provides description of the financing provided by the HSBC to the selected companies that can be attributed to renewable energy and fossil fuels.

HSBC has recognized the commercial potential of supporting the transition to a low carbon economy. It states “Business solutions that reduce carbon emissions or enable society to adapt to climate change bring environmental and social benefits as well as a commercial return. We call this climate business. These types of opportunities arise in the solar, wind, biomass, energy efficiency, low-carbon transport and water sectors.”¹³⁵ This is not a commitment to mitigating climate change, but it should serve as an indication of its increase in financing to renewable energy.

135 HSBC (2014.), *Sustainability Report 2013*, p. 12.

In 2006, HSBC Global Asset Management signed the UN-PRI commitment.¹³⁶ In 2006, “HSBC launched the Carbon Finance Strategy to support clients who are developing clean technologies and non-fossil fuel energy solutions that are both technically and commercially viable. We have also developed sustainability-focused business in areas of low-carbon energy, water infrastructure, sustainable forestry and related agricultural commodities, and have identified business development opportunities by geography, industry sector and customer group”.¹³⁷

In 2006, HSBC introduced its Energy Sector Policy, in which “HSBC adopts a cautious approach to activities which contribute significantly to climate change and which have a long asset life inconsistent with the transition to a low carbon economy”.¹³⁸

In 2010, HSBC states itself as “a leader in public markets equity-related wind financings for international companies, including the largest wind turbine equity raising since 2010 as part of the €1.4bn Vestas refinancing”.¹³⁹

Table 75 shows that there is some credence to the commitments made by HSBC. The bank increased its loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects by 181% in the second half of the period of study. Loans and underwriting to the selected companies attributable to fossil fuels increased by 18%. As a proportion of total loans and underwriting, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects increased by 5% while the proportion of loans and underwriting to the selected companies attributable to fossil fuels increased by 7%.

Table 75 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	181%	5%
Fossil fuels	18%	7%

• Loans

Loans to the selected companies attributable to renewable energy increased by 202% in the second half of the period of study. Loans to the selected companies attributable to fossil fuels did not change. Figure 45 provides an overview of HSBC loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels in the period 2004-2014. HSBC’s loans to fossil increased in the lead up to the global economic crisis, dropping to the lowest levels in 2009 before increasing rapidly until 2014. Loans to the selected companies attributable to renewable energy suffered during the global economic crisis, however, gradually increased between 2009 and 2013, before declining again in 2014.

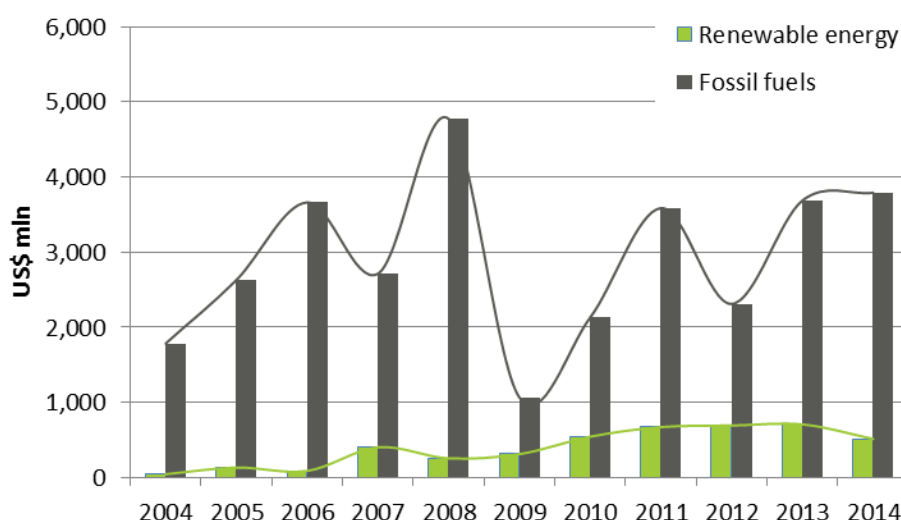
¹³⁶ HSBC (2010, May), *The UN Principles for Responsible Investment*.

¹³⁷ HSBC (2008, October), *HSBC and Climate Change*.

¹³⁸ HSBC (2014, March), *Introduction to HSBC’s Sustainability Risk Policies*.

¹³⁹ HSBC (2015, June), *Strategic Report 2014*.

Figure 170 HSBC loans to the selected companies (2004-2014)

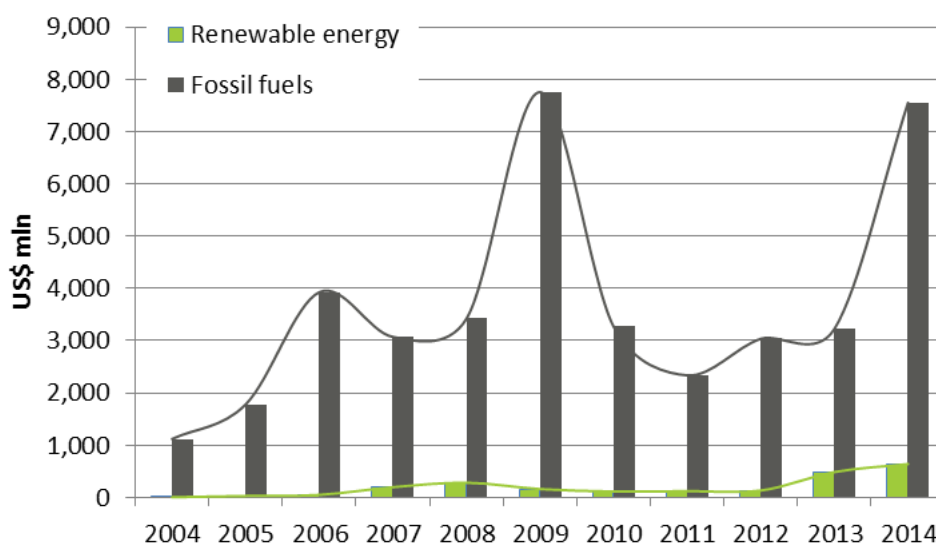


- Underwriting**

Underwriting to renewable energy increased by 144%, while underwriting to fossil fuels increased by 35%. Figure 46 shows the underwriting services provided by HSBC to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Similar to other financial institutions in this study, HSBC's underwriting services to the selected companies attributable to fossil fuels increased rapidly in 2009. They declined again, however, in 2010. HSBC's underwriting services to the selected companies attributable to fossil fuels exceed US\$ 7 billion again by 2014.

HSBC's underwriting services to renewable energy did not reach US\$ 1 billion throughout the period of study. Underwriting attributable to renewable energy increased gradually to minimal levels in 2008, after which they declined again until 2012. Since 2012 there seems to have been a gradual increase in underwriting services to renewable energy.

Figure 171 HSBC underwriting services to the selected companies (2004-2014)

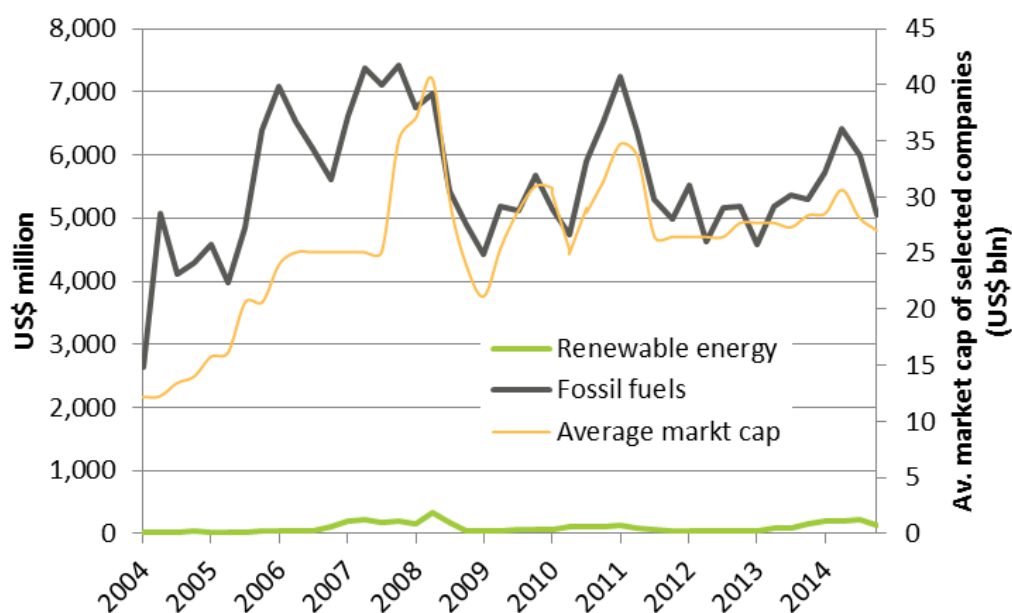


- **Shareholdings**

In 2006, HSBC Global Asset Management signed the UN-PRI commitment.¹⁴⁰ HSBC “runs a Climate Change Benchmark Index, used by institutional investors to make decisions about investing in companies likely to benefit from the responses to climate Change.”¹⁴¹ The benchmark has existed since 2008. However, when looking at Figure 47 it appears that the index has not resulted in increased investments in companies in the scope of this study attributable to renewable energy. Levels of investment in shareholdings attributable to renewable energy have been low throughout the period of study. However, average annual investments in selected companies attributable to renewable energy increased in the second half of the period of study by 9%. Average annual investments in selected companies attributable to fossil fuels decreased by 1%.

Investments in selected companies attributable to fossil fuels have exceeded US\$ 4 billion per quarter since 2004, following the trends in average market capitalization quite closely. Investments in selected companies attributable to renewable energy have hardly exceeded US\$ 200 million.

Figure 172 HSBC shareholdings in selected companies 2004-2014



8.3.9 Mitsubishi UFJ Financial

This section analyses the financing provided by Mitsubishi UFJ to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Mitsubishi UFJ states that it is “actively promoting and working to encourage the widespread use of renewable energy for the realization of a sustainable environment and the sustainability of society itself.”¹⁴²

140 HSBC (2010, May), *The UN Principles for Responsible Investment*.

141 HSBC (2014, March), *Sustainability Report 2013*, p. 12.

142 Mitsubishi UFJ (n.d.), “Promotion and dissemination of renewable energy”, online: <http://www.mufig.jp/english/csr/juten/sustainability/saiseikanou/>, viewed in September 2015.

In 2014, Mitsubishi UFJ “was ranked No.2 in the global project finance lead arranger table for renewable energy. This was largely attributable to the initiatives we have undertaken in renewable energy (solar, hydropower, wind, and thermal) around the world. Drawing on our proven track record and know-how cultivated over years, we will continue to be a driving force behind the dissemination of renewable energy going forward”.¹⁴³

Table 76 shows that Mitsubishi UFJ increased its loans and underwriting services attributable to renewable energy by 345% from the first half the period of study to the second. This contrasts with an increase of 25% attributable to fossil fuels. As a proportion of total loans and underwriting, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects increased by 7% while loans and underwriting to the selected companies attributable to fossil fuels decreased by 1%.

Table 76 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	345%	7%
Fossil fuels	25%	-1%

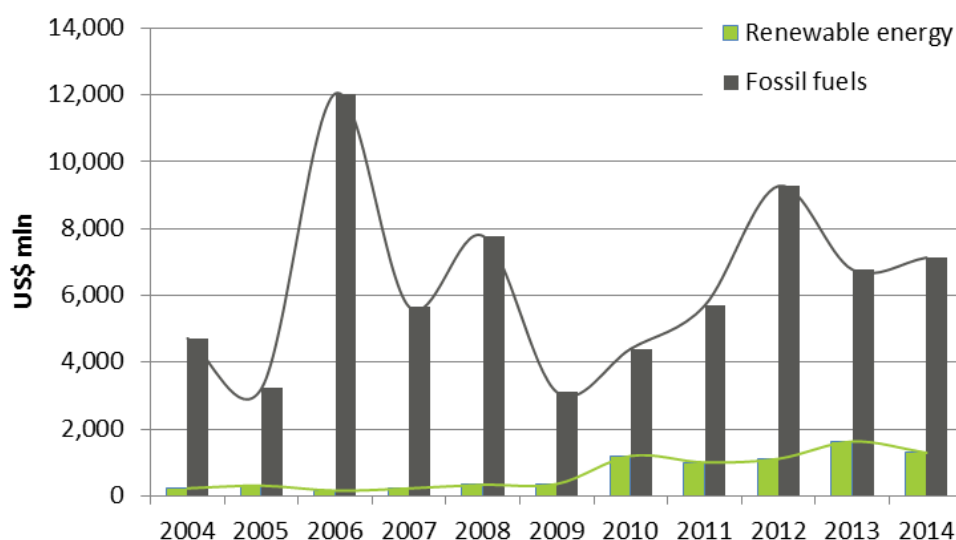
- **Loans**

Mitsubishi UFJ provided 346% more loans to the selected companies attributable to renewable energy in the second half of the period under study, compared to the first half. Loans to the selected companies attributable to fossil fuels decreased by 0.3%.

Figure 60 shows that while loans to the selected companies attributable to renewable energy fluctuated during the period of study, there is a general upward trend. Loans to the selected companies attributable to fossil fuels declined during the economic crisis, and gradually picked up again. However, Mitsubishi UFJ’s loans to fossil did not reach the peak experienced in 2006.

143 Mitsubishi UFJ (n.d.), “Promotion and dissemination of renewable energy”, online: <http://www.mufg.jp/english/csr/juten/sustainability/saiseikanou/>, viewed in September 2015.

Figure 173 Mitsubishi UFJ Financial loans to the selected companies (2004-2014)



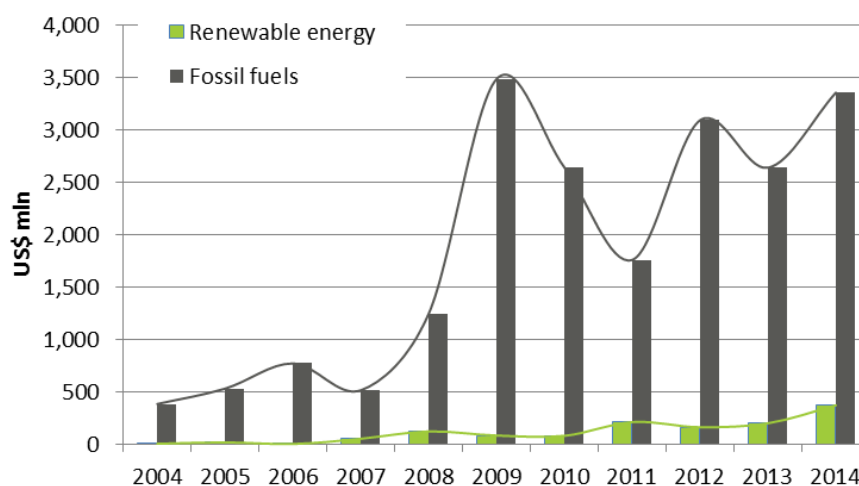
- Underwriting**

Mitsubishi UFJ increased its provision of underwriting services to the selected companies attributable to fossil fuels by 193% in the second half of the period of study compared to the first. However, it increased its underwriting for renewable energy by 340%.

Figure 61 provides a more detailed overview of the changes in the Mitsubishi UFJ's underwriting of renewable energy and fossil fuels between 2004 and 2014. In line with the general identified trend, underwriting services for fossil fuels increased in 2009. These declined in the years that followed, but have gradually increased since 2011.

Underwriting services for renewable energy also fluctuated in the period under study. However, they show a general upward trend since 2012.

Figure 174 Mitsubishi UFJ Financial underwriting services to the selected companies (2004-2014)

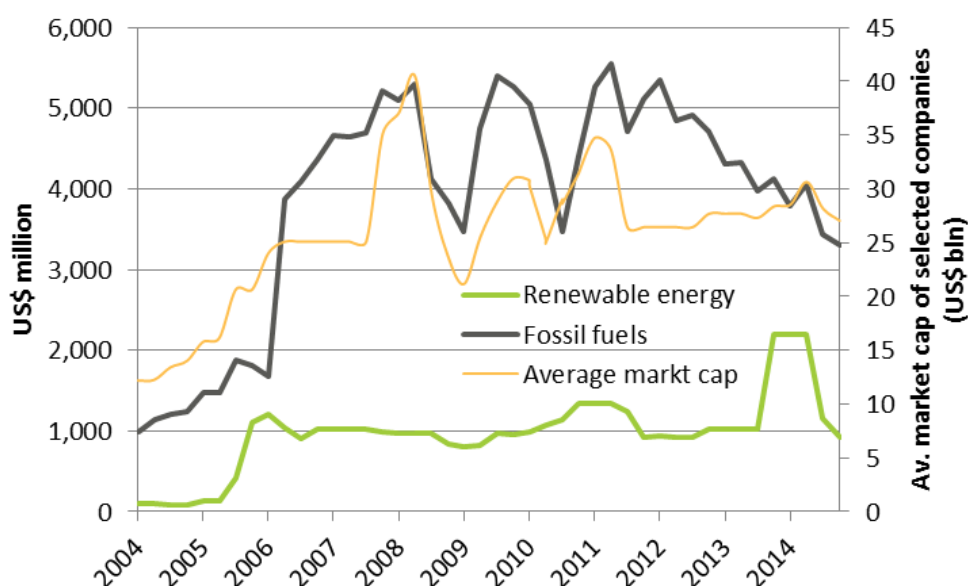


- Shareholdings**

Average annual investments in selected companies attributable to renewable energy increased by 67% in the second half of the period of study. Average annual investments in selected companies attributable to fossil fuels, however, also increased, though by a lesser 30%. As a proportion of total average annual investments in selected companies, shareholdings attributable to renewable energy increased by 5%, the proportion attributable to renewable energy increased by 3%.

Figure 62 shows that Mitsubishi UFJ's investments in selected companies attributable to fossil fuels generally follow the trends in average market capitalization of the selected companies. Investments attributable to renewable energy increased between 2004 and the second quarter of 2005. They have since generally remained over US\$ 1 billion, peaking in the second quarter of 2013, before declining again in 2014.

Figure 175 Mitsubishi UFJ Financial shareholdings in selected companies 2004-2014



8.3.10 Oversea-Chinese Banking Corporation

This section provides a description of the financing provided by Oversea-Chinese Banking Corporation (OCBC) to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

OCBC did not express any relevant climate change mitigation commitments.

Table 77 shows that OCBC increased its total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects by US\$ 1,653%. Loan and underwriting to fossil fuels increased by 75%. As a proportion of total loans and underwriting, renewable energy increased by 4% while fossil fuels decreased by 25%.

Table 77 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	1,653%	4%

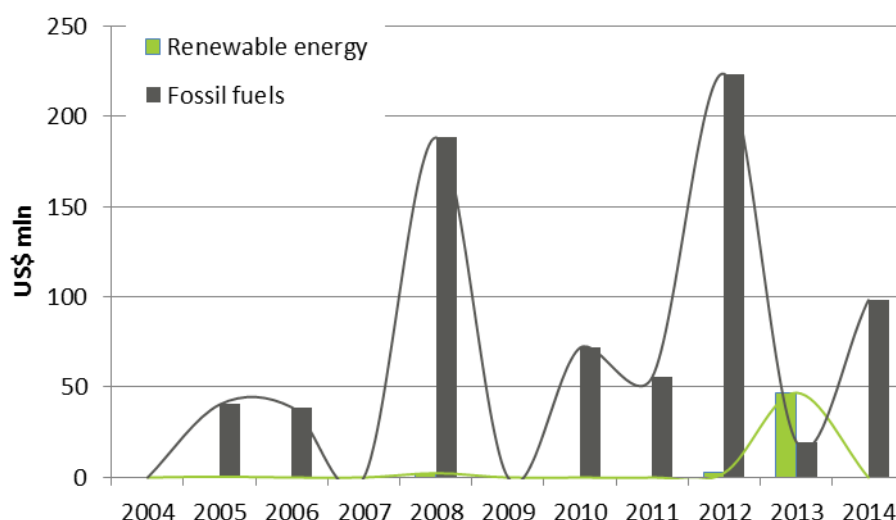
Energy source	Percent change	Proportion change
Fossil fuels	75%	-25%

- **Loans**

The above described increases and changes in proportions are all due to OCBC's loans to the selected companies. This research did not identify the participation of OCBC in any underwriting to the selected companies.

Figure 176 shows that OCBC loans to the selected companies attributable to renewable energy started at a very low level, approximately US\$ 3 million. In 2012 and 2013, OCBC provided loans to the selected companies attributable to renewable energy again, together approximately US\$ 50 million. Loans to the selected companies attributable to fossil fuels fluctuated but have mainly been over US\$ 50 million

Figure 176 OCBC loans to the selected companies (2004-2014)



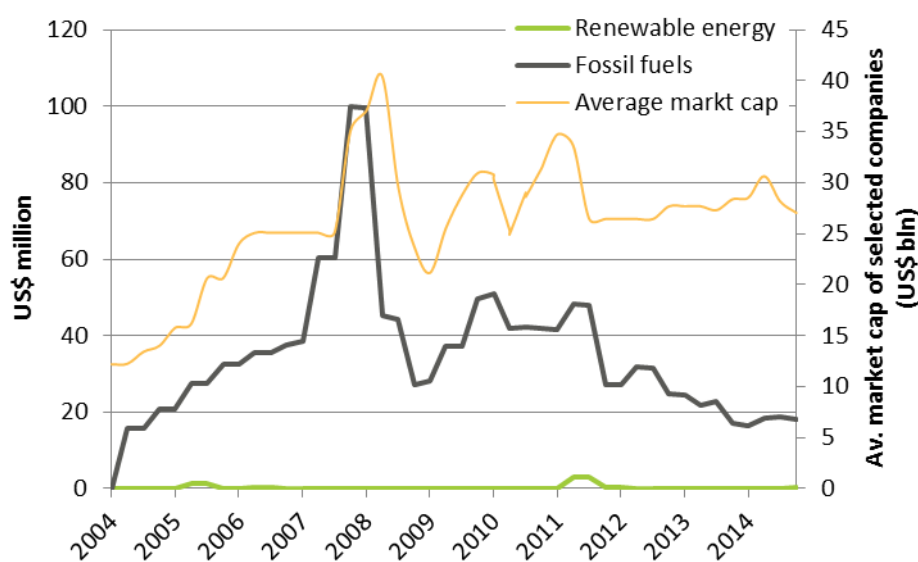
- **Underwriting**

This research did not identify any underwriting services provided by OCBC to the selected companies.

- **Shareholdings**

OCBC's average total investments attributable to renewable energy increased by 128% in the second half of the period of study. Average annual investments in selected companies attributable to renewable energy increased from US\$ 0.1 million to US\$ 0.3 million. Average investments in selected companies attributable to fossil fuels decreased by 14%. Figure 177 shows that investments in selected companies attributable to fossil fuels have generally followed the trends in the average market capitalization of the selected companies. However, there has been a gradual downward trend in investments in selected companies attributable to fossil fuels. However, there is a large difference between investments in selected companies attributable to fossil fuels and renewable energy. Investments in selected companies attributable to fossil fuels have hardly gone below US\$ 20 million.

Figure 177 OCBC shareholdings in selected companies 2004-2014



8.3.11 Panin Bank

This section provides an analysis of the financing provided by Panin Bank to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Panin only mentions its CSR activities such as reforestation as part of its role in 'mitigating climate change'.

Table 78 shows that Panin Bank decreased its total loans and underwriting to the selected companies attributable to fossil fuels by 47%. As a proportion of total loans and underwriting to the selected companies, fossil fuels increased by 21%. Panin Bank did not provide any loans or underwriting services to renewable energy throughout the period of study.

Table 78 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	n/a	0%
Fossil fuels	-47%	21%

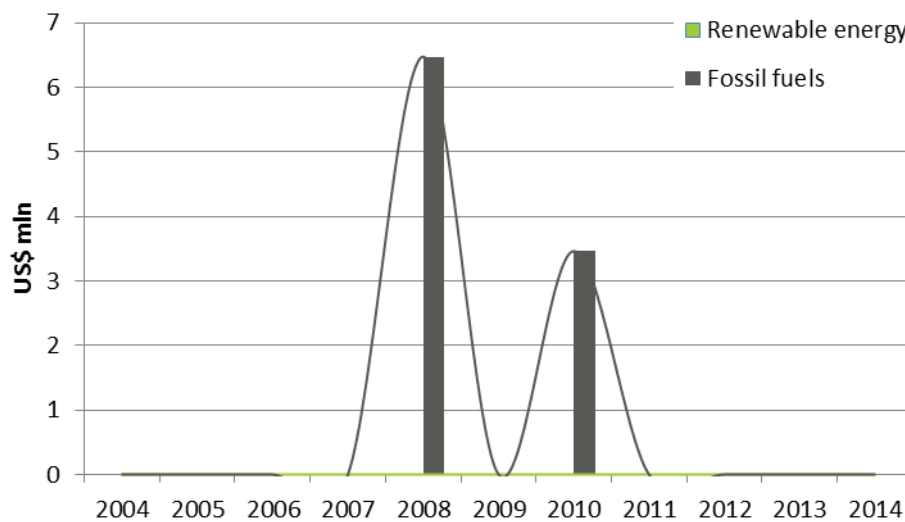
- **Loans**

This research did not identify any loans provided by Panin Bank to the selected companies.

- **Underwriting**

The above described decrease in financing of fossil fuel relates to underwriting, as there were no loans found to the selected companies that involved Panin Bank. Figure 178 provides a more detailed overview of the underwriting provided by Panin Bank to fossil fuels.

Figure 178 Panin Bank underwriting services to the selected companies (2004-2014)



- **Shareholdings**

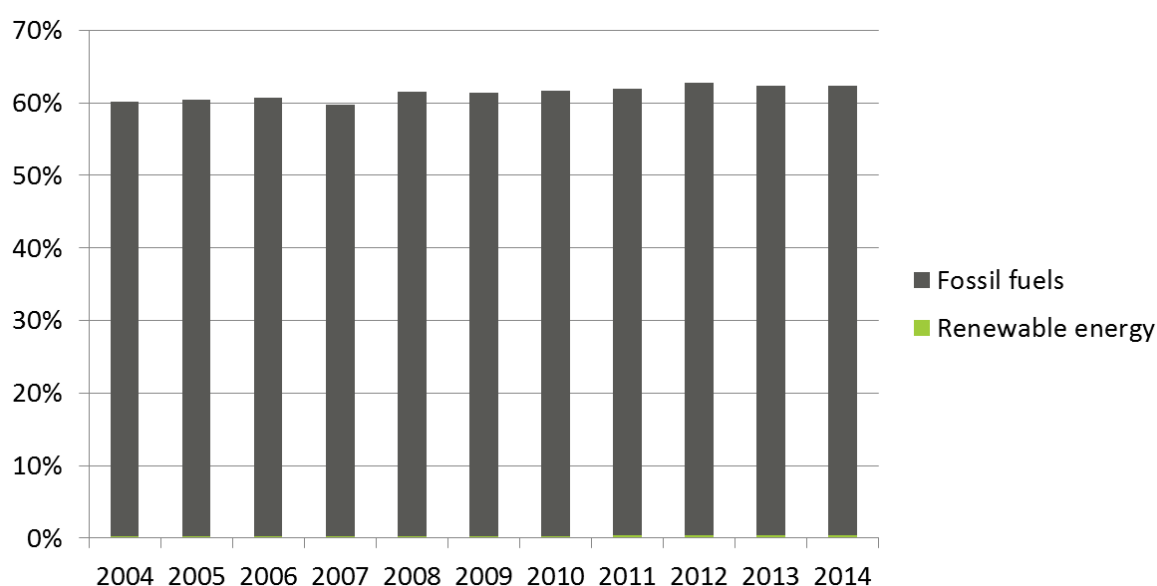
This research did not identify any investments by Panin Bank in the shares of the selected companies.

Chapter 9 Japan

This chapter outlines the trends in financing of the seven selected financial institutions active in Japan towards the selected companies attributable to fossil fuels (coal mining and oil & gas), renewable energy input equipment manufacturers (solar panels, concentrated solar power plants, wind turbine manufacturers, and geothermal power turbine and engineering companies), renewable energy projects, and utility companies, over the period 2004-2014.

Figure 179 provides an overview of the changes in installed capacity portfolio composition of the researched utility companies. It shows that there has been minimal increase in renewable energy capacity of the selected utility companies active in Japan. The vast majority of power is generated by fossil fuels. Nuclear energy is also an important source of power in Japan, although most nuclear power plants are still shutdown since the Fukushima accident. In fact, 80-90% of power in Japan is currently generated by fossil fuels.

Figure 179 Annual portfolio proportions of researched utility companies active in Japan



9.1 Loans and underwriting

This section provides an analysis of the loans and underwriting provided by financial institutions active in Japan to the selected companies and renewable energy projects. Section 9.1.1 provides an outline of the annual changes in the financing to the selected companies. Section 9.1.2 ranks the financial institutions active in Japan according to their financing of fossil fuels.

9.1.1 Annual analysis

Figure 180 shows that loans to the selected companies attributable to fossil fuels have fluctuated during the period of study. Loans from financial institutions active in Japan to fossil fuels peaked in 2012, and seem to show a decline until 2014. Loans to the selected companies attributable to renewable energy were at much lower levels, not exceeding US\$ 5 billion. However, since 2009 there seems to be a general, but gradual, upward trending in lending to renewable energy by the financial institutions active in Japan.

Figure 180 Annual loans provided by financial institutions active in Japan to the selected companies

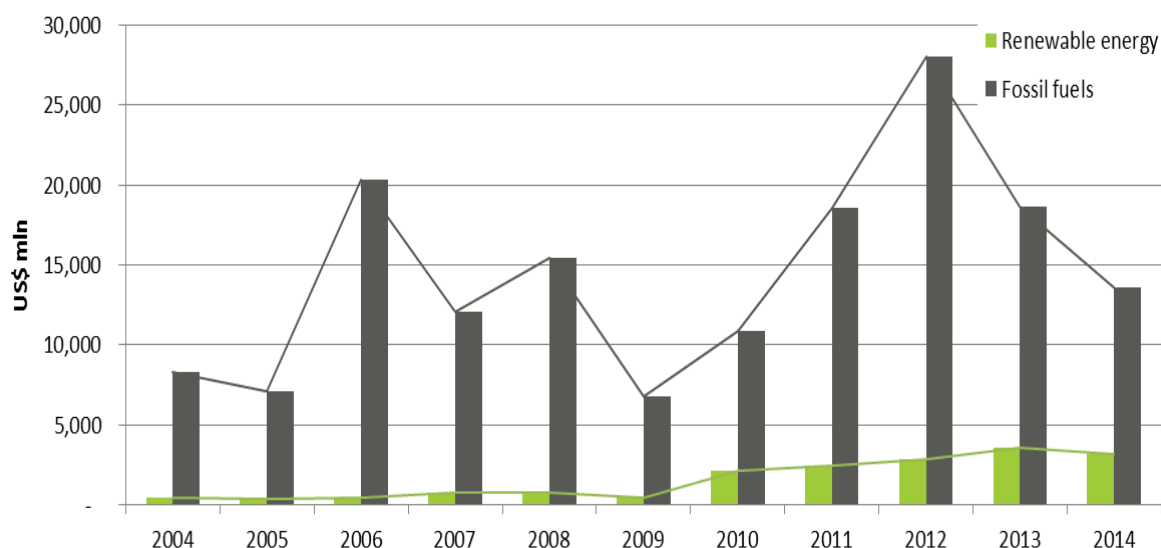
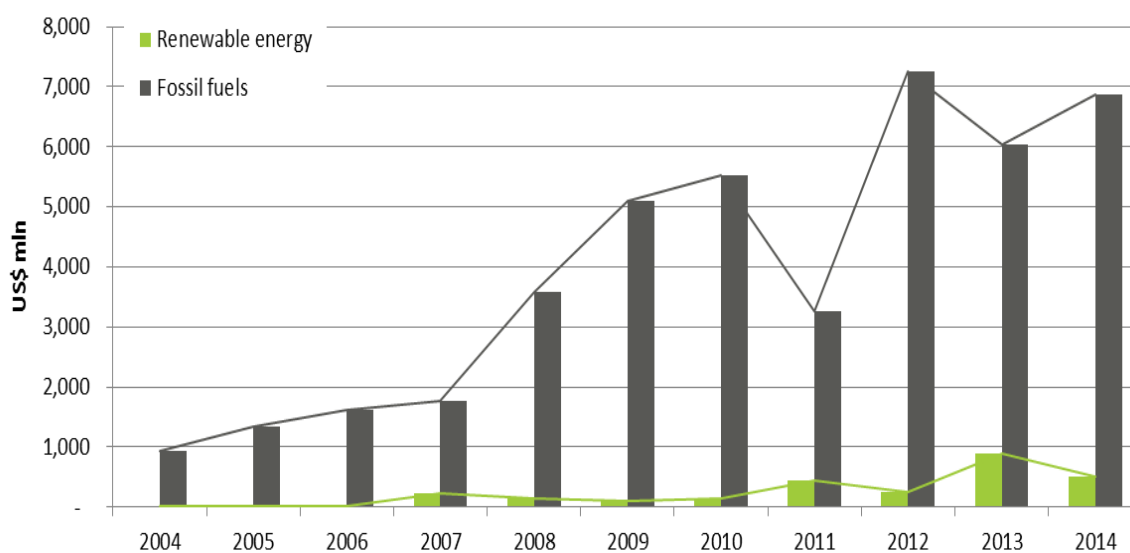


Figure 181 shows that, in contrast to loans, there seems to be a general upward trend in underwriting to fossil fuels. Underwriting for renewable energy is a much lower levels. Furthermore, after a peak in 2013, there seems to be a decline in underwriting for renewable energy.

Figure 181 Annual underwriting services provided by financial institutions active in Japan to the selected companies



9.1.2 Rankings

This section provides a ranking of the financial institutions active in Japan in terms of the value of their loans and underwriting services to the selected companies attributable to fossil fuels. Figure 182 shows the ranking of the top financiers of the selected companies attributable to fossil fuels for the period 2009 to 2014. Zooming in on the most recent five years provides a more current picture of the financial activities of the selected financial institutions with regard to their financing of the selected companies attributable to fossil fuels and renewable energy. The top three places are occupied by Mitsubishi UFJ Financial, Mizuho Financial, and Sumitomo Mitsui Financial. In the period 2009 to 2014, Mitsubishi UFJ Financial and Mizuho Financial each provided over US\$ 40 billion to the selected companies attributable to fossil fuels. In the same period they only provided between US\$ 4 billion and US\$ 8 billion in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects.

Figure 182 Ranking of the top financiers of the selected companies attributable to fossil fuels (loans & underwriting, US\$ mln, 2009-2014)

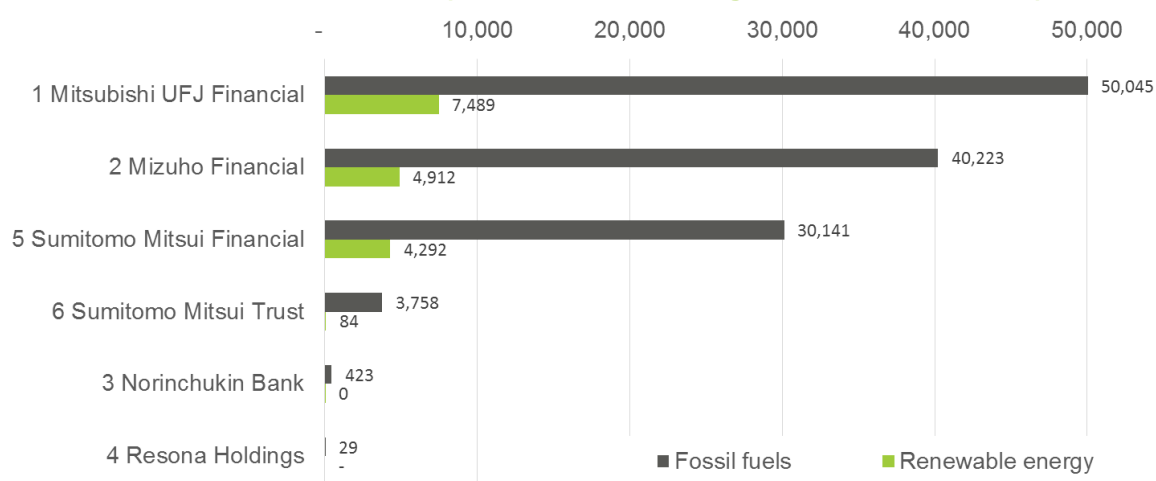


Table 79 provides an overview of the loans and underwriting to the selected companies attributable to fossil fuels and renewable energy. It shows that for all the financial institutions active in Japan the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels was higher than 80%. For three this proportion was over 95%, and for two of these the proportion was essentially 100% fossil fuels. This indicates the huge disparity between the financing of renewable energy and fossil fuels.

Table 79 also shows the percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Four of the six researched financial institutions active in Japan decreased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). However, these decreases were on the whole very small, not exceeding 8 percentage points. One financial institution marginally increased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014).

Table 79 Overview of loans and underwriting to the selected companies attributable to fossil fuels and renewable energy, and renewable energy projects (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Mitsubishi UFJ Financial	Japan	50,045	7,489	87%	-9%
Mizuho Financial	Japan	40,223	4,912	89%	-6%
Norinchukin Bank	Japan	423	0	100%	0%
Resona Holdings	Japan	29	-	100%	1%
Sumitomo Mitsui Financial	Japan	30,141	4,292	88%	-7%
Sumitomo Mitsui Trust	Japan	3,758	84	98%	-1%
Total		124,619	16,776	88%	-8%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

9.2 Shareholdings

This section provides an analysis of the investments in shareholdings by financial institutions active in Japan in the selected companies. Section 9.2.1 provides an outline of the annual changes in the investments in selected companies. Section 9.2.2 ranks the financial institutions active in Japan according to their investments in selected companies attributable to fossil fuels.

9.2.1 Annual analysis

Figure 183 shows that the average investments in selected companies, attributable to fossil fuels, generally followed the fluctuations in the average market capitalization of the selected companies. In the period 2004-2009, the investments of financial institutions active in Japan in fossil fuels generally remained below the trend lines. However, since 2011, the investments in selected companies attributable to fossil fuels have been well above the trend lines.

The gap between average investments in selected companies attributable to renewable energy and fossil fuels is not as large as it is in another countries. Since 2011, these have, on average, been over US\$ 2 billion, compared with investments in selected companies attributable to fossil fuels in the same period of well over US\$ 10 billion.

Figure 183 Annual investments by financial institutions active in Japan in selected companies

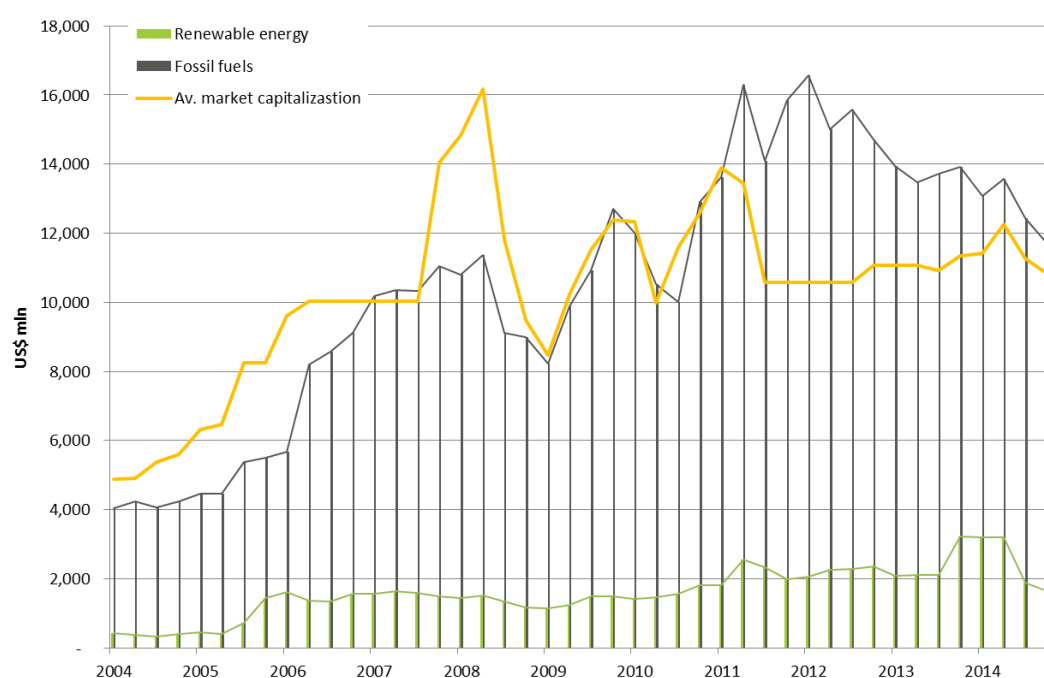


Table 80 shows the difference the magnitude of investments in selected companies attributable to renewable energy and fossil fuels.

Table 80 Average annual investments in selected companies attributable to renewable energy (US\$ mln)

Year	Renewable energy	Fossil fuels
2004	383	4,142
2005	748	4,948
2006	1,476	7,888
2007	1,578	10,472
2008	1,366	10,064
2009	1,339	10,433
2010	1,565	11,364

Year	Renewable energy	Fossil fuels
2011	2,173	14,972
2012	2,235	15,466
2013	2,383	13,759
2014	2,485	12,695

Table 81 shows that on average, throughout the period of study, the financial institutions active in Japan invested 10% of the investments in selected companies in renewable energy and 67% in fossil fuels. In recent years, the proportion of investments in selected companies attributable to renewable energy has been increasing, peaking in 2014 at 14%. We hope that this is a trend that will continue.

Table 81 Average annual % investment in renewable energy

Year	Renewable energy	Fossil fuels
2004	5%	59%
2005	9%	57%
2006	11%	61%
2007	10%	63%
2008	9%	65%
2009	9%	66%
2010	9%	67%
2011	11%	74%
2012	11%	76%
2013	13%	74%
2014	14%	74%
Average	10%	67%

9.2.2 Rankings

This section provides a ranking of the financial institutions active in Japan in terms of the value of their investments attributable to fossil fuels. Figure 184 provides a ranking of the top financial institutions active in Indonesia on the basis of their average annual investments in the selected companies attributable to fossil fuels in the period 2009-2014. Mitsubishi UFJ Financial, Sumitomo Mitsui Trust and Mizuho Financial occupy the top three positions with the highest average annual investments in selected companies attributable to fossil fuels. All three financial institutions invested on average well over US\$ 3 billion in fossil fuels annual in the period 2009-2014.

Figure 184 also shows the large gap between average annual investments in selected companies attributable to fossil fuels and renewable energy. Only one financial institution had an average annual investment in renewable energy of over US\$ 1 billion, Mitsubishi UFJ Financial. Only one other financial institution had an average annual investment of over US\$ 0.7 billion, Sumitomo Mitsui Trust. The third largest investor in fossil fuels, Mizuho Financial, only had an annual investment in renewable energy of US\$ 166 million in the period 2009-2014.

Figure 184 Ranking of the top average annual investors in the selected companies attributable to fossil fuels (US\$ mln, 2009-2014)

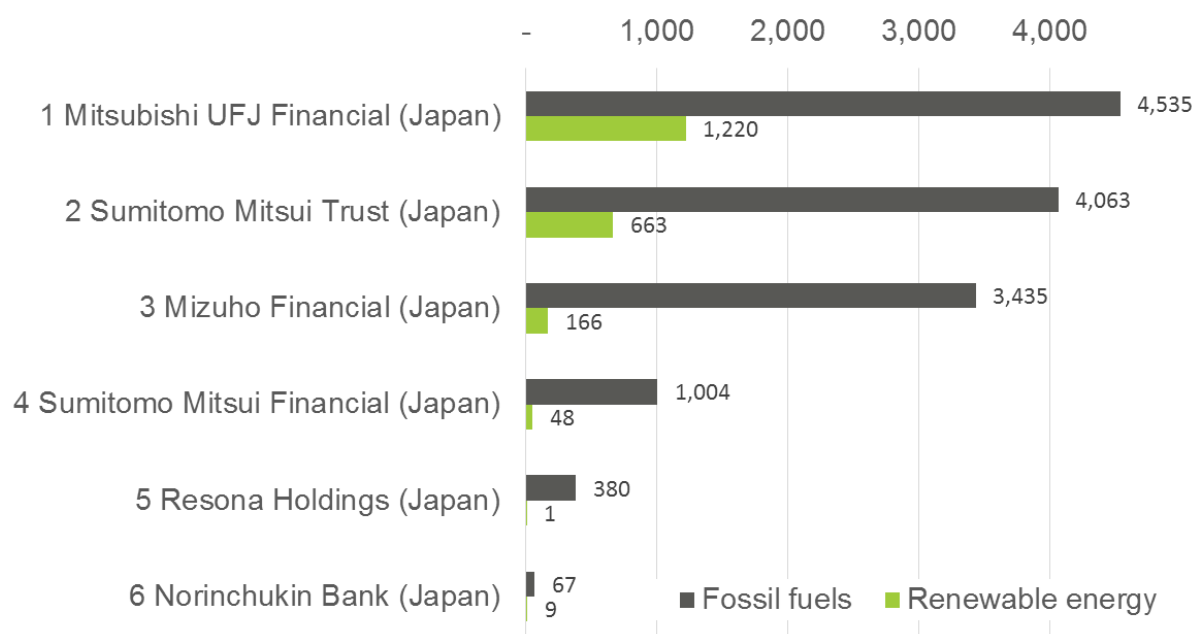


Table 82 provides an overview of the investments in the selected companies attributable to fossil fuels and renewable energy. It shows that for five of the six financial institutions the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels was higher than 85%. For three this proportion was over 95%. For one financial institution this proportion was essentially 100%. This indicates the huge disparity between the financing of renewable energy and fossil fuels.

Table 82 also shows the change in the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in the investments in the selected companies attributable to renewable energy and fossil fuels. Two financial institutions marginally decreased the proportion of fossil fuels in the investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). However, these decreases were very small, not exceeding 3 percentage points. Two financial institutions actually increased the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). Norinchukin Bank had the highest proportion increase of 42 percentage points.

Table 82 Overview of shareholdings in the selected companies attributable to fossil fuels and renewable energy (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Mitsubishi UFJ Financial	Japan	4,535	1,220	79%	-3%
Sumitomo Mitsui Trust	Japan	4,063	663	86%	14%

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Mizuho Financial	Japan	3,435	166	95%	0%
Sumitomo Mitsui Financial	Japan	1,004	48	95%	-2%
Resona Holdings	Japan	380	1	100%	0%
Norinchukin Bank	Japan	67	9	89%	42%
Total		13,484	2,106	86%	-1%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

9.3 Financial institution analysis

This section provides an analysis of the changes in values of loans, underwriting services and investments in shares in selected companies that can be attributed to renewable energy and fossil fuels individually for the financial institutions active in Japan. The sub-sections are ordered alphabetically by bank name.

9.3.1 Japan Post Group

This research did not identify any financial relationships between Japan Post and the selected companies.

9.3.2 Mitsubishi UFJ Financial

This section analyses the financing provided by Mitsubishi UFJ to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Mitsubishi UFJ states that it is “actively promoting and working to encourage the widespread use of renewable energy for the realization of a sustainable environment and the sustainability of society itself.”¹⁴⁴

In 2014, Mitsubishi UFJ “was ranked No.2 in the global project finance lead arranger table for renewable energy. This was largely attributable to the initiatives we have undertaken in renewable energy (solar, hydropower, wind, and thermal) around the world. Drawing on our proven track record and know-how cultivated over years, we will continue to be a driving force behind the dissemination of renewable energy going forward”.¹⁴⁵

144 Mitsubishi UFJ (n.d.), “Promotion and dissemination of renewable energy”, online: <http://www.mufig.jp/english/csr/juten/sustainability/saiseikanou/>, viewed in September 2015.

145 Mitsubishi UFJ (n.d.), “Promotion and dissemination of renewable energy”, online: <http://www.mufig.jp/english/csr/juten/sustainability/saiseikanou/>, viewed in September 2015.

Table 83 shows that Mitsubishi UFJ increased its loans and underwriting services attributable to renewable energy by 345% from the first half the period of study to the second. This contrasts with an increase of 25% attributable to fossil fuels. As a proportion of total loans and underwriting, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects increased by 7% while loans and underwriting to the selected companies attributable to fossil fuels decreased by 1%.

Table 83 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

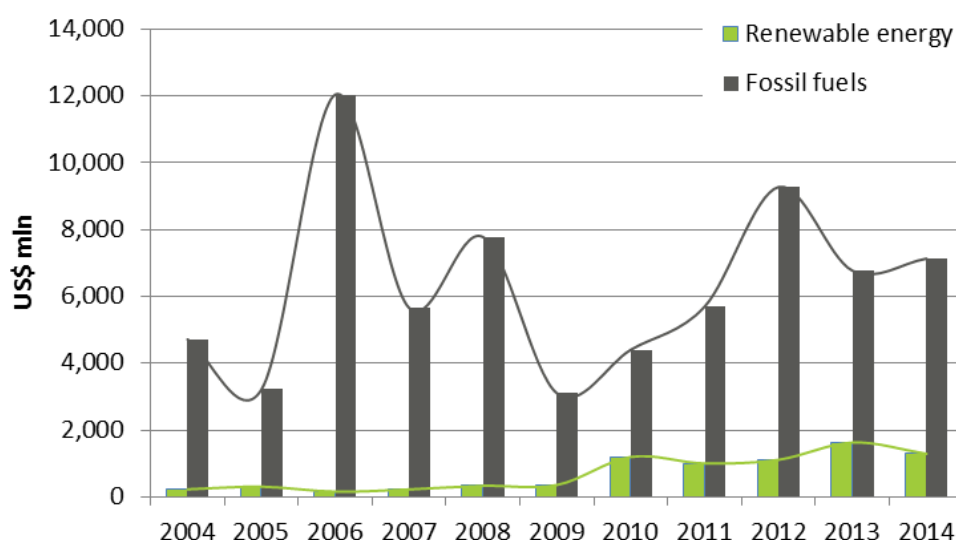
Energy source	Percent change	Proportion change
Renewable energy	345%	7%
Fossil fuels	25%	-1%

- Loans**

Mitsubishi UFJ provided 346% more loans to the selected companies attributable to renewable energy in the second half of the period under study, compared to the first half. Loans to the selected companies attributable to fossil fuels decreased by 0.3%.

Figure 60 shows that while loans to the selected companies attributable to renewable energy fluctuated during the period of study, there is a general upward trend. Loans to the selected companies attributable to fossil fuels declined during the economic crisis, and gradually picked up again. However, Mitsubishi UFJ's loans to fossil did not reach the peak experienced in 2006.

Figure 185 Mitsubishi UFJ Financial loans to the selected companies (2004-2014)



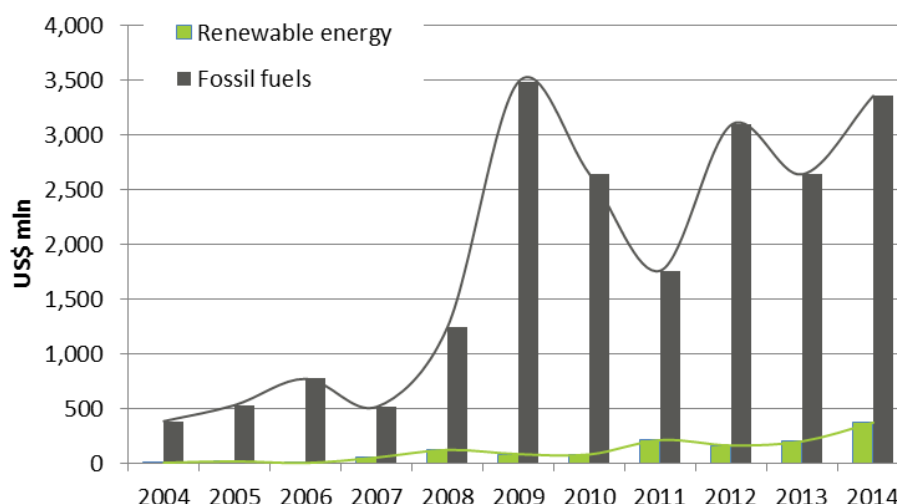
- Underwriting**

Mitsubishi UFJ increased its provision of underwriting services to the selected companies attributable to fossil fuels by 193% in the second half of the period of study compared to the first. However, it increased its underwriting for renewable energy by 340%.

Figure 61 provides a more detailed overview of the changes in the Mitsubishi UFJ's underwriting of renewable energy and fossil fuels between 2004 and 2014. In line with the general identified trend, underwriting services for fossil fuels increased in 2009. These declined in the years that followed, but have gradually increased since 2011.

Underwriting services for renewable energy also fluctuated in the period under study. However, they show a general upward trend since 2012.

Figure 186 Mitsubishi UFJ Financial underwriting services to the selected companies (2004-2014)

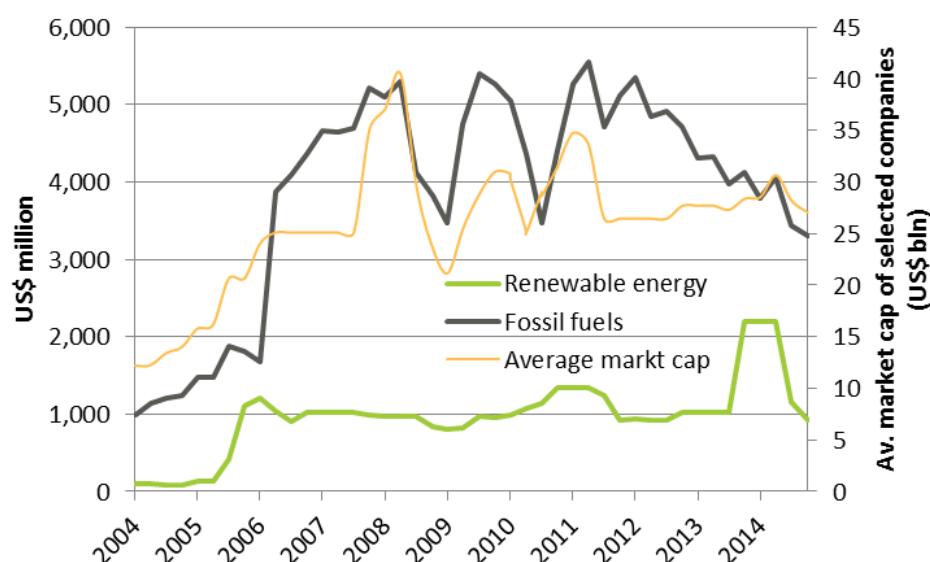


• Shareholdings

Average annual investments in selected companies attributable to renewable energy increased by 67% in the second half of the period of study. Average annual investments in selected companies attributable to fossil fuels, however, also increased, though by a lesser 30%. As a proportion of total average annual investments in selected companies, shareholdings attributable to renewable energy increased by 5%, the proportion attributable to renewable energy increased by 3%.

Figure 62 shows that Mitsubishi UFJ's investments in selected companies attributable to fossil fuels generally follow the trends in average market capitalization of the selected companies. Investments attributable to renewable energy increased between 2004 and the second quarter of 2005. They have since generally remained over US\$ 1 billion, peaking in the second quarter of 2013, before declining again in 2014.

Figure 187 Mitsubishi UFJ Financial shareholdings in selected companies 2004-2014



9.3.3 Mizuho Financial

This section describes the financing provided by Mizuho Financial to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Mizuho Financial states that “[a]gainst the backdrop of the increasingly active efforts being made in Japan and overseas to protect the global environment, companies are proactively promoting environmental friendliness promotion efforts. Mizuho believes that part of the financial institution's social mission is to provide financial support for these efforts.”¹⁴⁶

In order to assist it in its efforts, Mizuho Financial has developed “Carbon Accounting: An evaluation of business activities involving CO₂ focused on the amount of greenhouse gas emissions (GHG) related to CO₂ produced or reduced by business activities. Mizuho Bank developed its own methodology, “Carbon Accounting,” to evaluate “Environmental Burdens” and “Environmental Preservation Effects” in power plant projects it financed via project finance. Our evaluation approach is described and the results published since First half of FY 2006.”¹⁴⁷

Table 84 shows that Mizuho Financial increased its loans and underwriting services attributable to renewable energy by 316% from the first half the period of study to the second. This contrasts with an increase of 75% attributable to fossil fuels. As a proportion of total loans and underwriting, loans and underwriting attributable to renewable energy increased by 4%, while the proportion attributable to fossil fuels decreased by 2%.

146 Mizuho Financial (n.d.), “Finance”, online: <http://www.mizuho-fg.co.jp/english/csr/environment/business/financing.html>, viewed in September 2015.

147 Mizuho Financial (n.d.), “Initiatives for carbon accounting”, online: <http://www.mizuho-fg.co.jp/english/csr/environment/activity/carbon.html>, viewed in September 2015.

Table 84 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

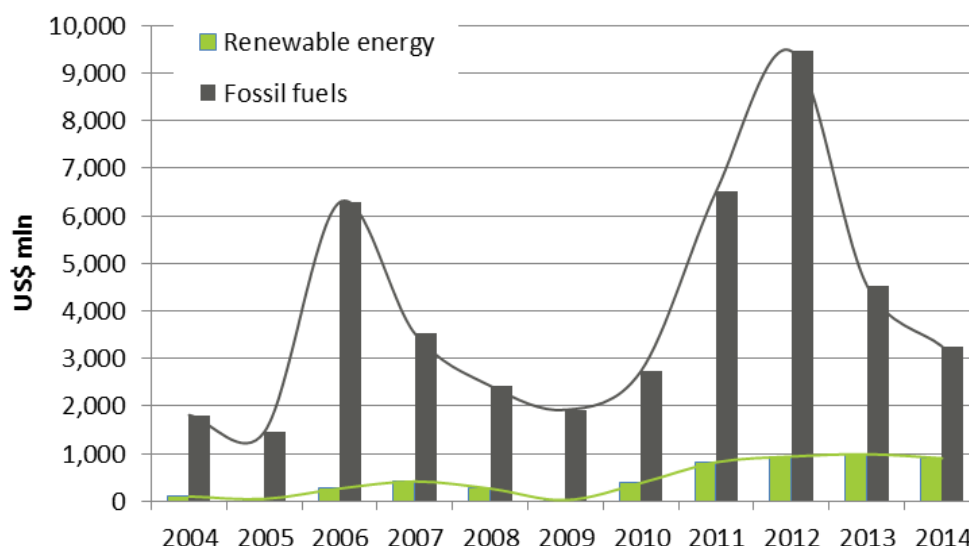
Energy source	Percent change	Proportion change
Renewable energy	316%	4%
Fossil fuels	75%	-2%

- **Loans**

Mizuho Financial's loans to the selected companies attributable to renewable energy increased by 262% in the second half of the period of study, compared to the first. Loans to the selected companies attributable to fossil fuels increased by 67%

Figure 63 shows that loans to both fossil fuels and renewable energy declined during the economic crisis. Both quickly recovered, with loans to the selected companies attributable to fossil fuels reaching a peak of over US\$ 9 billion in 2012, before declining again. Loans to the selected companies attributable to renewable energy have been stable at approximately US\$ 1 billion since 2011.

Figure 188 Mizuho Financial loans to the selected companies (2004-2014)

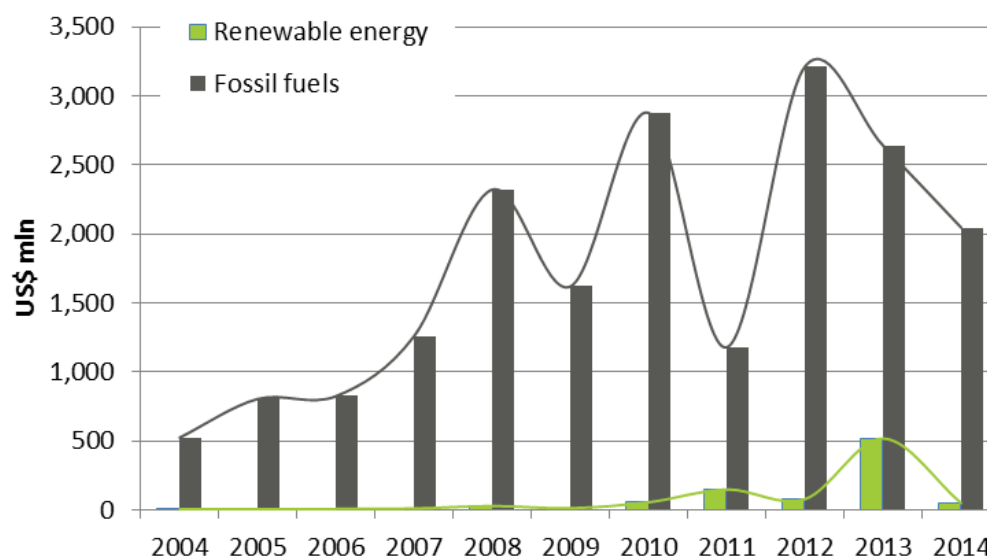


- **Underwriting**

Underwriting services to the selected companies attributable to fossil fuels provided by Mizuho Financial increased by 95% in the second half of the period of study. However, underwriting services to renewable energy increased by 1,330%.

Figure 64 shows that there was a general upward trend in underwriting for fossil fuels until 2012. Underwriting services to the selected companies attributable to fossil fuels has declined since then. There were only minimal levels of underwriting to renewable energy before 2009. These have gradually increased since then, peaking at over US\$ 500 million in 2013. 2014 has shown a sharp decline though.

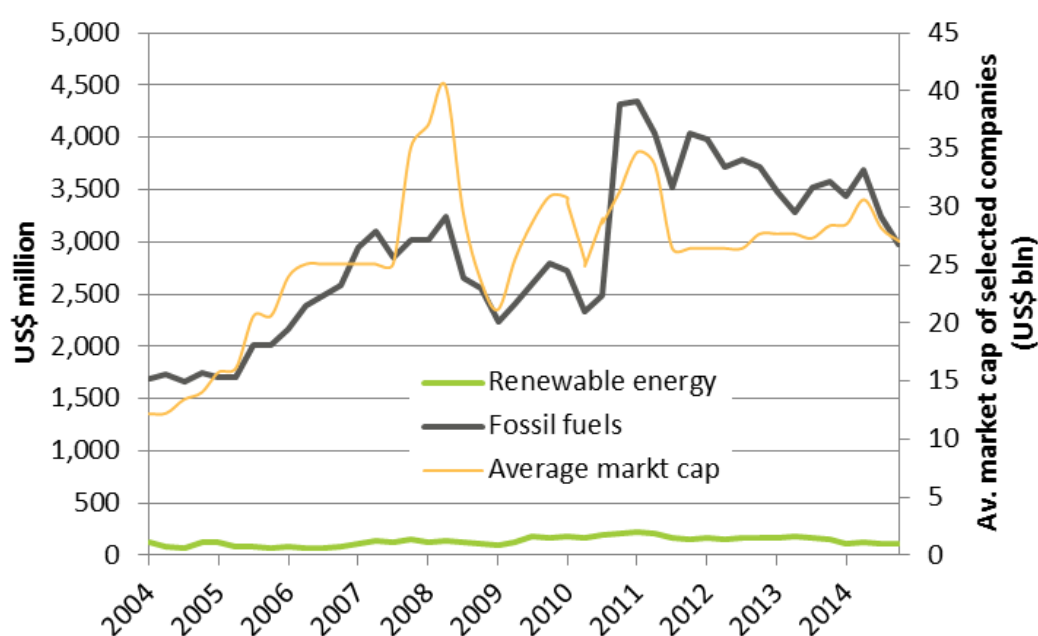
Figure 189 Mizuho Financial underwriting services to the selected companies (2004-2014)



- **Shareholdings**

Average annual investments in selected companies attributable to renewable energy increased by 51% in the second half of the period of study. Average annual investments in selected companies attributable to fossil fuels increased by 43%. As a proportion of total average annual investments in selected companies, investments in selected companies attributable to renewable energy increased by 1%, while investments in selected companies attributable to fossil fuels increased by 12%. Mizuho Financial's investments in selected companies attributable to fossil fuels have followed the general trend in fluctuations in average market capitalization of the selected companies, as shown in Figure 65. Investments in selected companies in renewable energy have remained constantly low, with little sign of growth or decline throughout the period of study.

Figure 190 Mizuho Financial shareholdings in selected companies 2004-2014



9.3.4 Norinchukin Bank

This section describes the financing provided by Norinchukin Bank to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Norinchukin states that it will support renewable energy projects which contribute to the promotion of agriculture, forestry, fishery and local communities.¹⁴⁸

Table 85 shows that Norinchukin Banks total loans and underwriting to the selected companies attributable to fossil fuels increased by 19% in the second half of the period of study. As a proportion of total loans and underwriting, fossil fuels increased by 14%.

Table 85 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

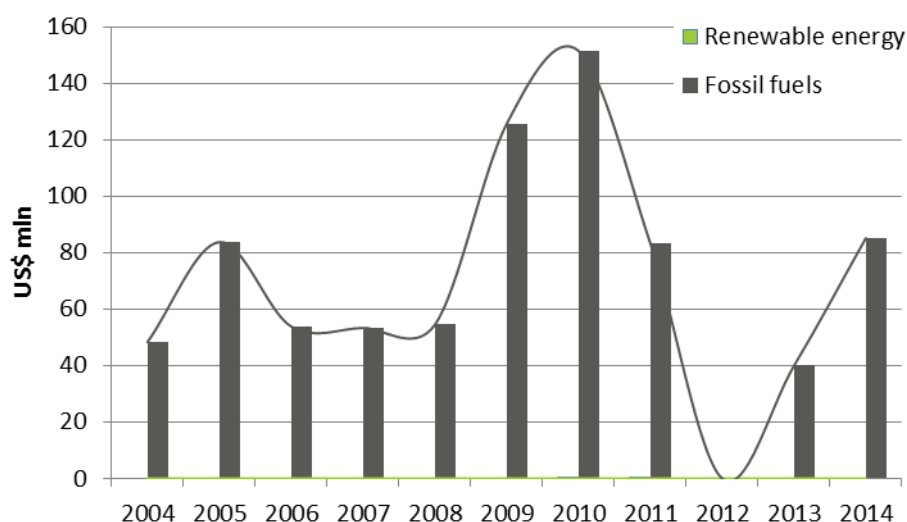
Energy source	Percent change	Proportion change
Renewable energy	n/a	0%
Fossil fuels	19%	14%

• Loans

Norinchukin Bank only provided minor loans to attributable to renewable energy in 2010 and 2011. Loans to the selected companies attributable to fossil fuels dominated. They fluctuated through the period, peaking in 2010, before decreasing again. Since 2013 there has been an upward trend again, as see in Figure 191.

¹⁴⁸ Norinchukin Bank (2015, July), *CSR Report 2014*.

Figure 191 Norinchukin Bank to the selected companies (2004-2014)



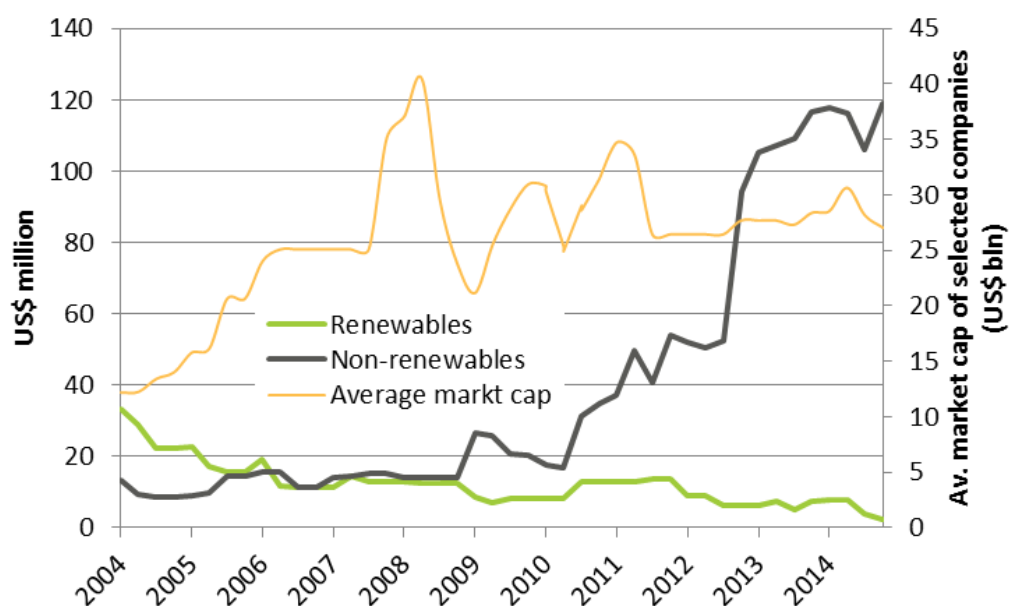
- **Underwriting**

This research did not identify any underwriting services provided by Norinchukin to the selected companies.

- **Shareholdings**

Norinchukin Bank's average shareholdings in selected companies attributable to renewable energy decreased by 41% in the second half of the period of study. Shareholdings attributable to fossil fuels, in the same period, increased by 337%. Figure 191 shows that in 2004 shareholdings in renewable energy were higher than those in fossil fuels. However, since 2008, investments in selected companies attributable to fossil fuels have increased at a very rapid pace.

Figure 192 Norinchukin shareholdings in selected companies 2004-2014



9.3.5 Resona Holdings

This section provides a description of the financing provided by Resona Holdings to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Resona Holdings has made no commitment to climate change mitigation.

Table 86 shows that Resona Holdings has decreased its loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects by 100% in the second half of the period of study. In the same period, Resona Holdings has also decreased its financing of fossil fuels by 96%. The proportion of total loans and underwriting attributable to renewable energy remained the same. The proportion attributable to fossil fuels increased.

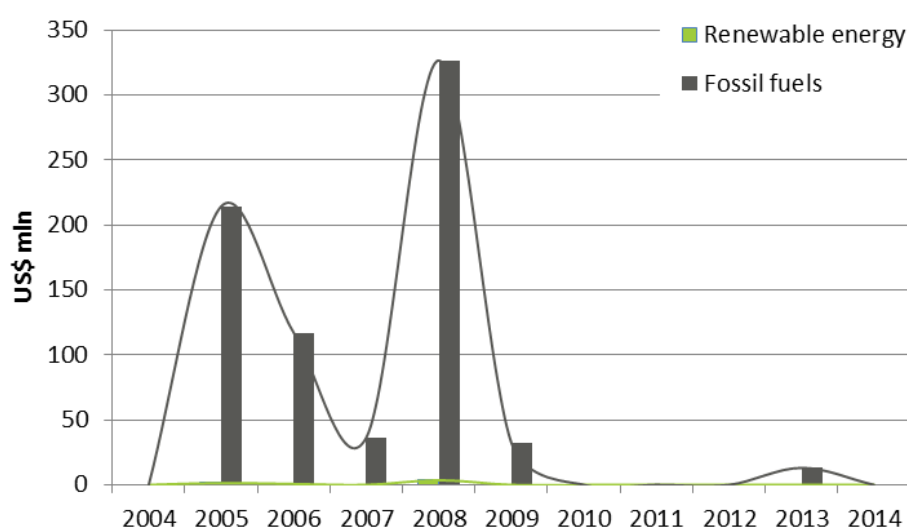
Table 86 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	-100%	0%
Fossil fuels	-96%	25%

- Loans**

The above described changes in financing and proportions all related to Resona Holdings' loans to the selected companies. This research did not identify any involvement of Resona Holdings in underwriting services provided to the selected companies. Figure 193 shows that the majority of loans were provided before 2009. The value of loans attributable to renewable energy never exceeded US\$ 4 million. Loans to the selected companies attributable to fossil fuels, on the hand, exceeded US\$ 100 million for three years.

Figure 193 Resona Holdings loans to the selected companies (2004-2014)



- Underwriting**

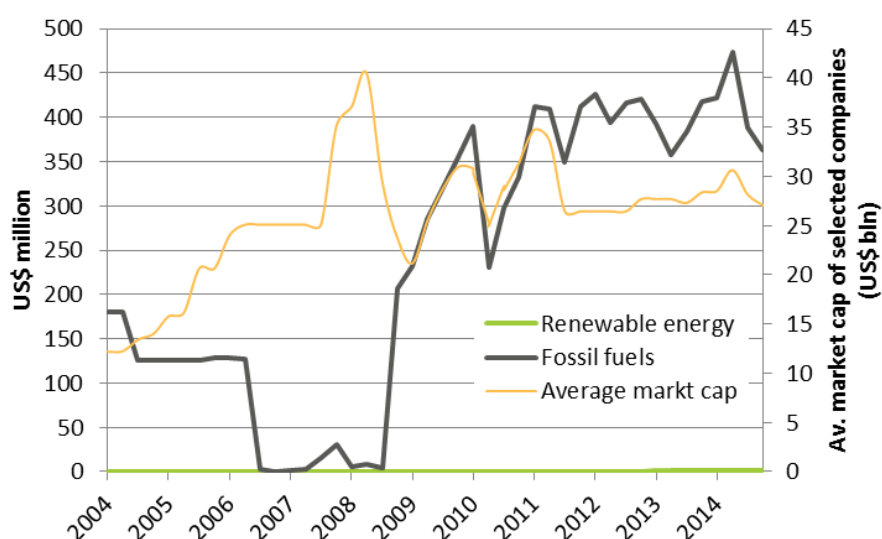
This research did not identify any underwriting services provided by Resona Holdings to the selected companies.

- **Shareholdings**

Resona Holdings' average investments in selected companies attributable to renewable energy increased by 729% in the second half of the period of study. However, in terms of value, the average investment increased from US\$ 0.09 million to US\$ 0.7 million. Average investments in selected companies attributable to fossil fuels increased by 214%, from US\$ 199 to US\$ 372 million.

Figure 194 shows that since 2009 there has been a rapid increase in investments in selected companies attributable to fossil fuels. These have generally followed the fluctuations of average market capitalization since 2009. Investments in selected companies attributable to fossil fuels have shown a rising trend.

Figure 194 Resona Holdings shareholdings in selected companies 2004-2014



9.3.6 Sumitomo Mitsui Financial

This section provides a description of the financing provided by Sumitomo Mitsui Financial to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Sumitomo Mitsui Financial states that it is actively supporting renewable energy projects in Japan and all over the world.¹⁴⁹ Table 87 shows that there is some credence to this claim. In the second half of the period of study, Sumitomo Mitsui Financial increased its loans and underwriting to the selected companies attributable to renewable energy by 513%. In the same period, loans and underwriting to the selected companies attributable to fossil fuels increased by 136%. In terms of proportion of total loans and underwriting, loans and underwriting attributable to renewable energy increased by 5%, while the proportion attributable to fossil fuels decreased by 2%.

149 Sumitomo Mitsui Financial (n.d.), "Eco-business", online: <http://www.smbc.co.jp/aboutus/responsibility/environment/buisiness/index.html>, viewed in September.

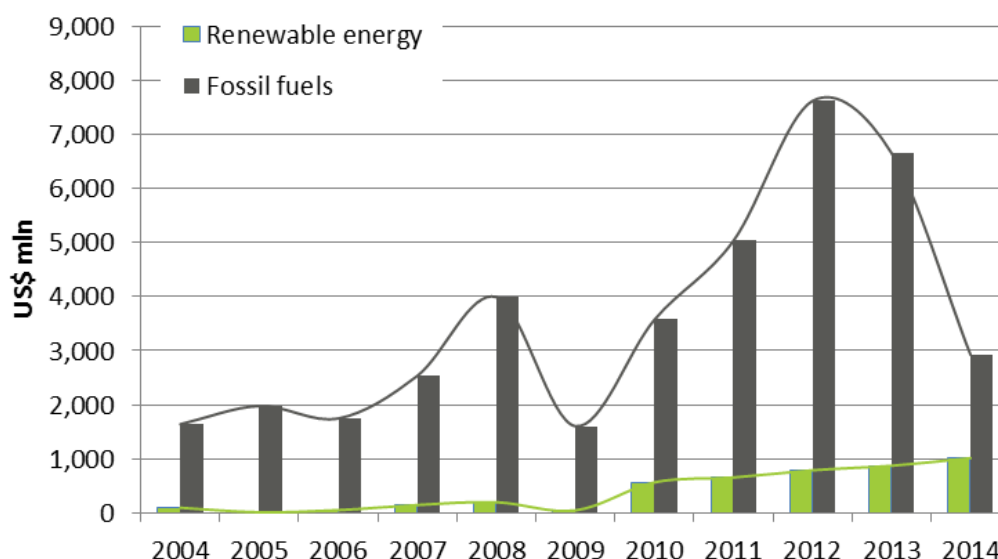
Table 87 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	513%	5%
Fossil fuels	136%	-2%

- Loans**

In the second half of the period under study Sumitomo Mitsui Financial increased its loans to the selected companies attributable to renewable energy by 627%, it is loans to the selected companies attributable to fossil fuels increased by 110%. Figure 75 provides a more detailed picture of the changes in loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Loans to the selected companies attributable to renewable energy show a clear upward trend particularly since 2009, reaching nearly US\$ 1 billion per year by 2012. Loans to the selected companies attributable to fossil fuels far exceeded US\$ 1 billion throughout the period of study, though have shown a declining trend since 2012.

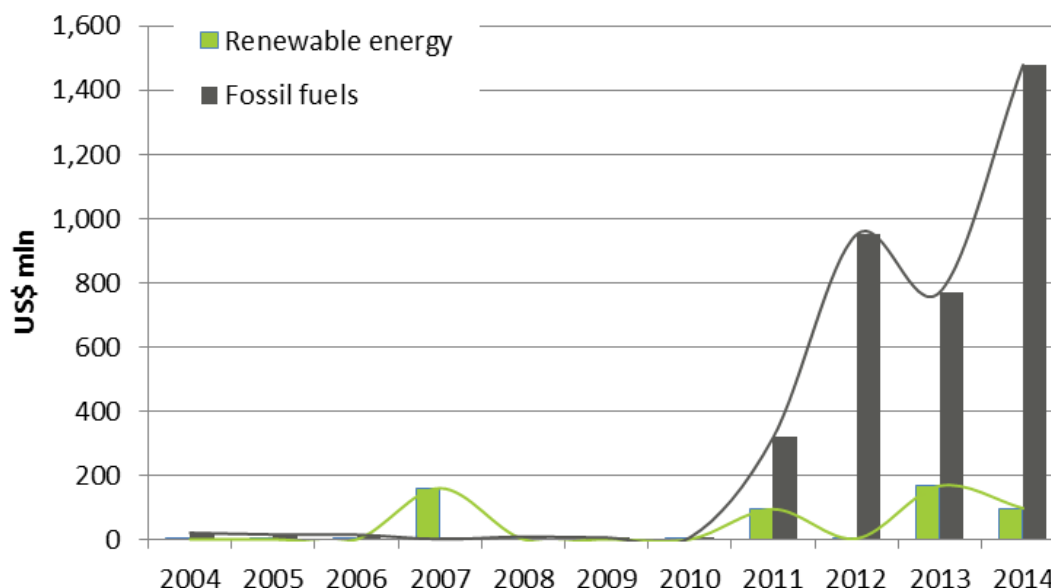
Figure 195 Sumitomo Mitsui Financial loans to the selected companies (2004-2014)



- Underwriting**

Underwriting services to renewable energy increased 125% in second half of the period of study. However, Sumitomo Mitsui Financial's underwriting services to the selected companies attributable to fossil fuels increased by a startling 5,599%. Underwriting services to renewable energy never exceeded US\$ 200 million between 2004 and 2014. Underwriting to fossil fuels, on the other hand, rose rapidly from a few million between 2007 and 2010, to more than US\$ 1.4 billion in 2014.

Figure 196 Sumitomo Mitsui Financial underwriting services to the selected companies (2004-2014)

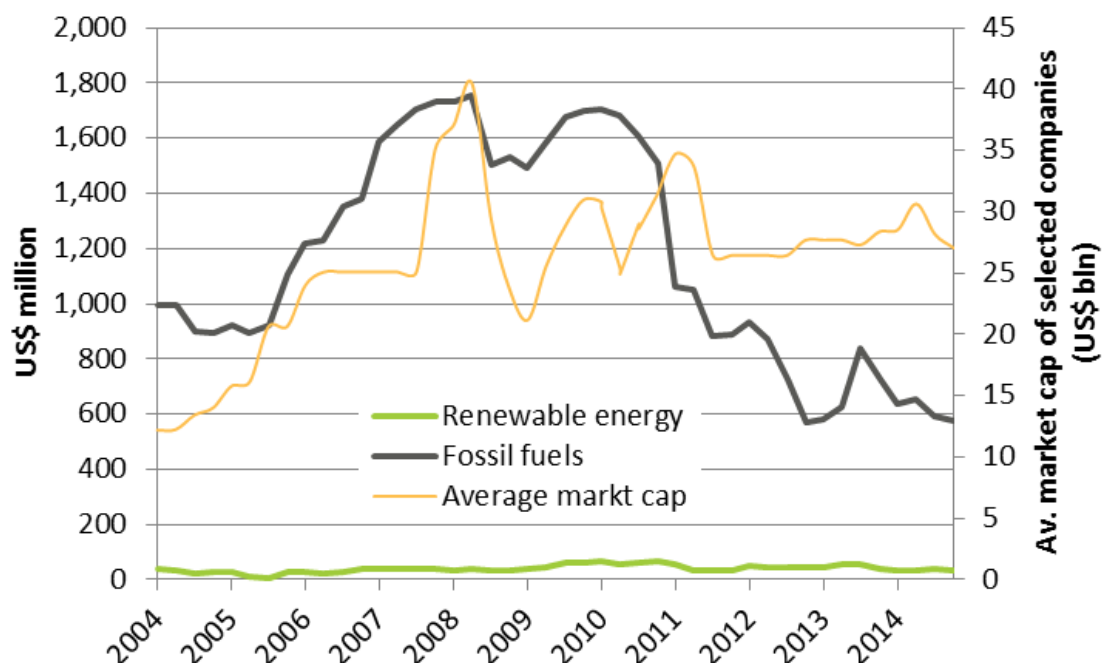


- **Shareholdings**

Sumitomo Mitsui Financial's average annual investments in selected companies attributable to renewable energy increased by 46% in the second half of the period of study. In the same period, shareholdings attributable to fossil fuels decreased by 22%. As a proportion of total shareholdings in selected companies, shareholdings attributable to renewable energy increased by 2%, while the proportion attributable to fossil fuels increased by 4%.

Sumitomo Mitsui Financial's investments in the shareholdings of the selected companies attributable to fossil fuels were consistently high throughout the period of study. From 2006 to 2010 there was a broad peak of over US\$ 1.2 billion, which wasn't aligned with the trends in average market capitalization of the selected companies. Shareholdings attributable to renewable energy were consistently low. However, shareholdings attributable to fossil fuels have been declining since 2010, although they have remained over US\$ 600 million on average.

Figure 197 Sumitomo Mitsui Financial shareholdings in selected companies 2004-2014



9.3.7 Sumitomo Mitsui Trust

This section provides an analysis of the financing provided by Sumitomo Mitsui Trust to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Sumitomo Mitsui Trust states that “[w]e are working on developing and providing products and services that help mitigate climate change. Our financial functions are being leveraged to promote energy conservation and encourage the use of renewable energy.”¹⁵⁰

Table 88 Sumitomo Mitsui Trust, in the second half of the period of study, increased its loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects by 568%. Loans and underwriting to the selected companies attributable to fossil fuels increased by 151%. The proportion of total loans and underwriting to the selected companies, attributable to renewable energy, increased by 1%. The proportion attributable to fossil fuels increased by 14%.

Table 88 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

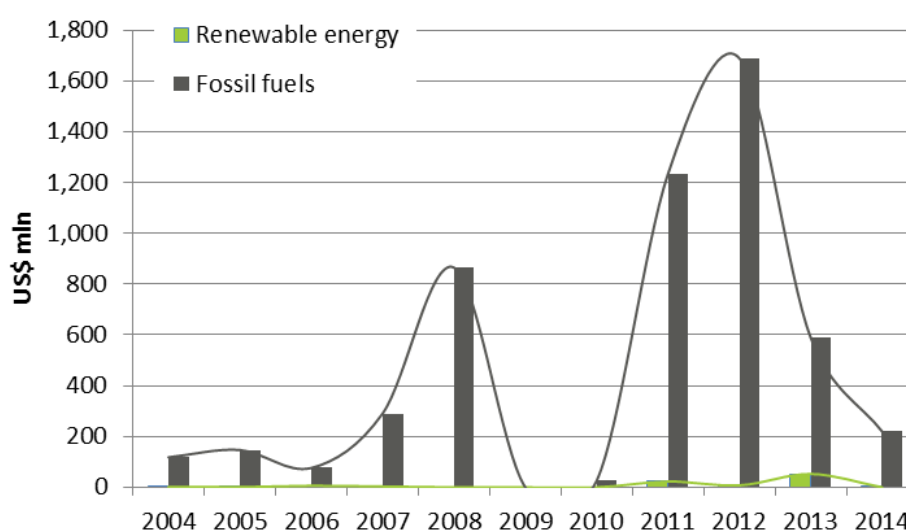
Energy source	Percent change	Proportion change
Renewable energy	568%	1%
Fossil fuels	151%	14%

150 Sumitomo Mitsui Financial Trust (n.d.), “Action guidelines for mitigating climate change”, online: http://smth.jp/en/csr/management/climate_change_guideline/index.html, viewed in September 2015.

- **Loans**

The above descriptions of increases in financing and proportions relate to Sumitomo Mitsui Trust's loans to the selected companies. This research did not identify Sumitomo Mitsui Trust's participation in underwriting to the selected companies or identified renewable energy projects. Figure 198 shows that the overall levels of loans to the selected companies attributable to renewable energy were very low compared to fossil fuels. Only in 2013 did the loans to the selected companies attributable to fossil fuels exceed US\$ 50 million. Loans to the selected companies attributable to renewable energy, on the other hand, reached over US\$ 1 billion for two years. Since 2012 there does seem to be a decline in Loans to the selected companies attributable to fossil fuels, however, there also seems to be a decline in loans to the selected companies attributable to renewable energy and renewable energy projects.

Figure 198 Sumitomo Mitsui Trust loans to the selected companies (2004-2014)



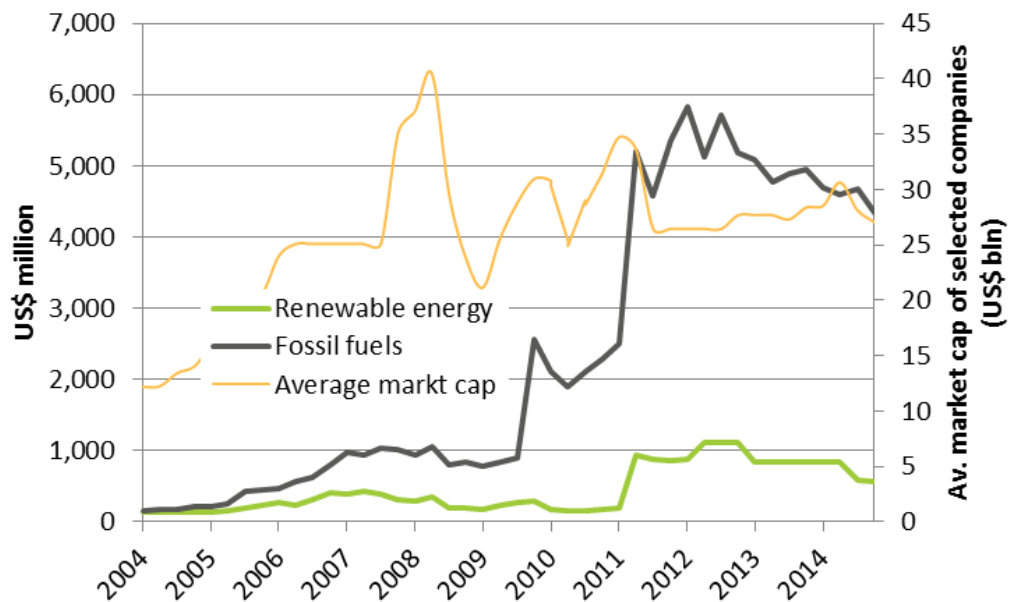
- **Underwriting**

This research did not identifying any underwriting services provided by Sumitomo Mitsui Trust to the selected companies.

- **Shareholdings**

Sumitomo Mitsui Trust's average investments in selected companies attributable to renewable energy increased by 145%. Investments increased from US\$ 250 million, to US\$ 612 million. Average investments in selected companies attributable to fossil fuels increased by 449%, from US\$ 716 million to approximately US\$ 3.9 billion. Figure 199 shows that investments fossil fuels increased rapidly in 2009, levelling off by the second half of 2011. Investments in selected companies attributable to renewable energy increased rapidly in 2011, levelling off in 2012.

Figure 199 Sumitomo Mitsui Trust shareholdings in selected companies 2004-2014

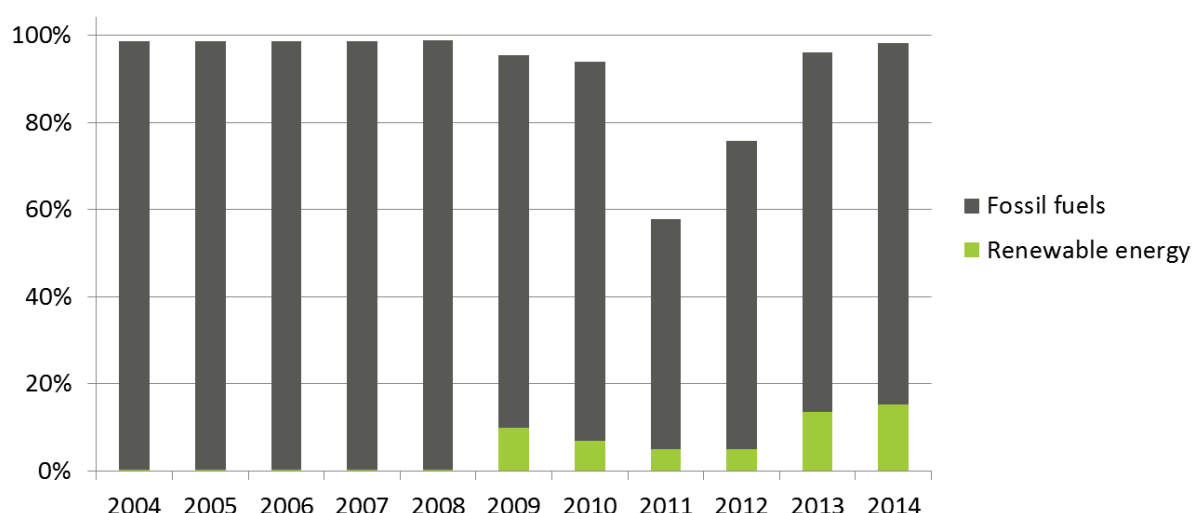


Chapter 10 Netherlands

This chapter outlines the trends in financing of the 10 selected financial institutions active in the Netherlands towards the selected companies attributable to fossil fuels (coal mining and oil & gas), renewable energy input equipment manufacturers (solar panels, concentrated solar power plants, wind turbine manufacturers, and geothermal power turbine and engineering companies), renewable energy projects, and utility companies, over the period 2004-2014.

Figure 200 provides an overview of the changes in portfolio composition of the researched utility companies. It shows that there has been a very gradual increase in renewable energy (solar, wind and geothermal), however, the electricity is still predominantly generated through fossil fuels.

Figure 200 Annual portfolio proportions of researched utility companies active in Netherlands



10.1 Loans and underwriting

This section provides an analysis of the loans and underwriting provided by financial institutions active in the Netherlands to the selected companies and renewable energy projects. Section 10.1.1 provides an outline of the annual changes in the financing to the selected companies. Section 10.1.2 ranks the financial institutions active in the Netherlands according to their financing of fossil fuels.

10.1.1 Annual analysis

Figure 201 shows that loans to the selected companies attributable to fossil fuels fluctuated throughout the period of study. After a decline in 2009, there seems to be a general upward trend in lending to fossil fuels. Nevertheless, there is a decline in lending to fossil fuels in 2014, which hopefully will set a precedent. Loans to the selected companies attributable to renewable energy also fluctuated, reaching a peak in 2008, before declining again. Since 2012, there seems to be an upward trend in lending to renewable energy, reaching new heights in 2014. Hopefully this trend will continue.

Figure 201 Annual loans provided by financial institutions active in the Netherlands to the selected companies

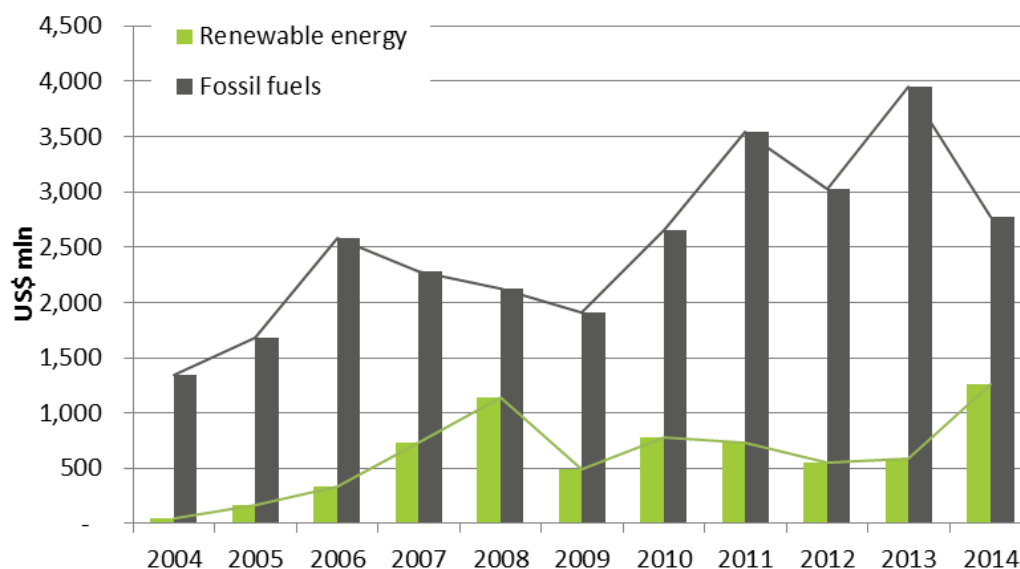
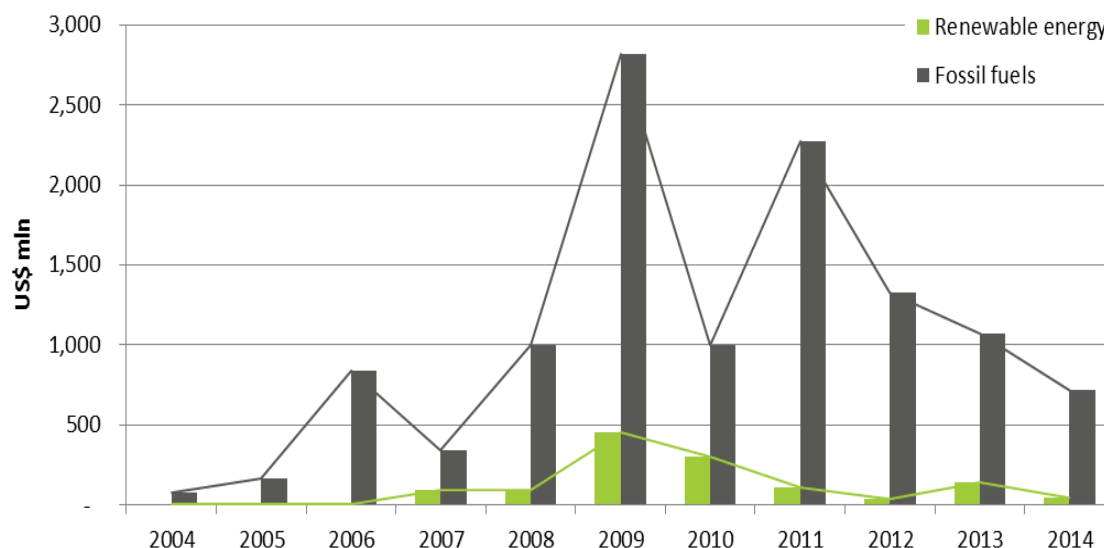


Figure 202 shows that underwriting to renewable energy by financial institutions active in the Netherlands has been declining since 2009. However, there has also been a general downward trend in underwriting for fossil fuels.

Figure 202 Annual underwriting services provided by financial institutions active in the Netherlands to the selected companies



10.1.2 Rankings

This section provides a ranking of the financial institutions active in the Netherlands in terms of the value of their loans and underwriting services to the selected companies attributable to fossil fuels. Figure 203 shows the ranking of the top financiers of the selected companies attributable to fossil fuels for the period 2009 to 2014. Zooming in on the most recent five years provides a more current picture of the financial activities of the selected financial institutions with regard to their financing of the selected companies attributable to fossil fuels and renewable energy. The top three places are occupied by the largest financial institutions in the Netherlands, dominated by ING Group. In the period 2009 to 2014, ING Group provided approximately US\$ 22 billion to the selected companies attributable to fossil fuels. In the same period it only provided approximately US\$ 3 billion in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects.

Figure 203 shows that this difference in financing to fossil fuels and renewable energy is not common to all the financial institutions active in the Netherlands. Rabobank, for example, has an almost even distribution between the two sources of energy. ASN Bank and Triodos Bank did not provide any loans and underwriting to the selected companies attributable to fossil fuels.

Figure 203 Ranking of the top financiers of the selected companies attributable to fossil fuels (loans & underwriting, US\$ mln, 2009-2014)

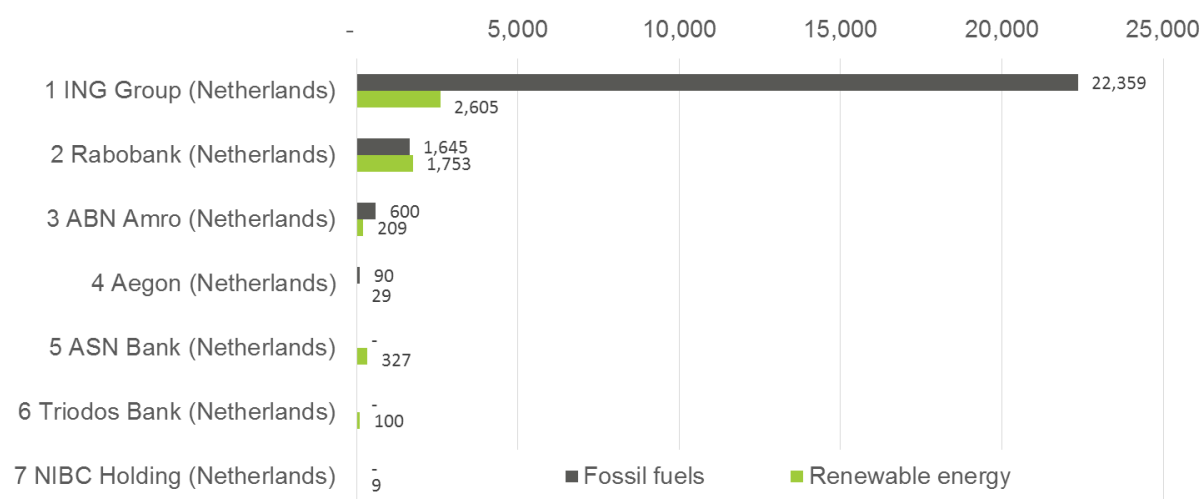


Table 89 provides an overview of the loans and underwriting to the selected companies attributable to fossil fuels and renewable energy. It shows that for three of the five financial institutions the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels was higher than 70%. For ING Group this proportion was 90%. However, three financial institutions active in the Netherlands did not provide loans and underwriting to the selected companies attributable to fossil fuels in the period 2009-2014. These were: ASN Bank, NIBC Holding and Triodos Bank.

Table 89 also shows the percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Two of the researched financial institutions active in the Netherlands decreased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). These decreases were significant, 24 percentage points for Rabobank and 100 percentage points for NIBC. ING Group actually increased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014) by 4 percentage points.

Table 89 Overview of loans and underwriting to the selected companies attributable to fossil fuels and renewable energy, and renewable energy projects (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
ING Group	Netherlands	22,359	2,605	90%	4%
Rabobank	Netherlands	1,645	1,753	48%	-24%
ABN Amro	Netherlands	600	209	74%	n/a
Aegon	Netherlands	90	29	75%	n/a
ASN Bank	Netherlands	-	327	0%	0%
NIBC Holding	Netherlands	-	9	0%	-100%
Triodos Bank	Netherlands	-	100	0%	0%
Total		24,694	5,033	83%	1%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

10.2 Shareholdings

This section provides an analysis of the investments in shareholdings by financial institutions active in the Netherlands in the selected companies. Section 10.2.1 provides an outline of the annual changes in the investments in selected companies. Section 10.2.2 ranks the financial institutions active in the Netherlands according to their investments in selected companies attributable to fossil fuels.

10.2.1 Annual analysis

Figure 204 shows that the average investments in selected companies, attributable to fossil fuels, generally followed the fluctuations in the average market capitalization of the selected companies. However, in the periods 2004-2010 and 2012-2014, the investments in selected companies attributable to fossil fuels have exceeded the trend lines.

Investments in selected companies attributable to renewable energy have generally been much lower. They reached a peak in 2008, declining gradually until 2012. Since 2012 there has been a marginal increase in investments in selected companies attributable to renewable energy.

Figure 204 Annual investments by financial institutions active in the Netherlands in selected companies

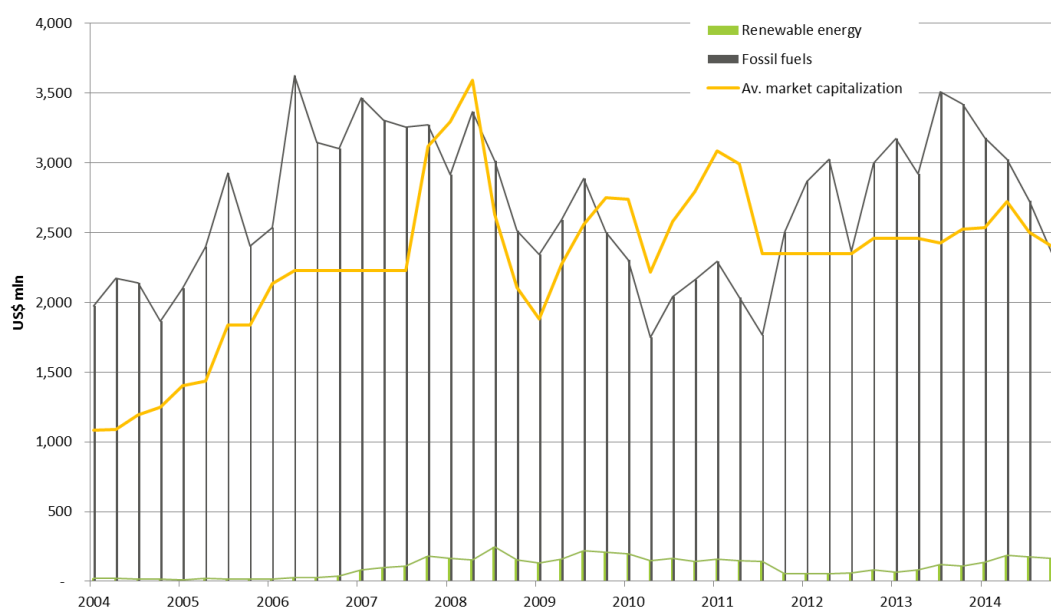


Table 90 shows the large difference between investments in selected companies attributable to renewable energy and investments in selected companies attributable to fossil fuels.

Table 90 Average annual investments in selected companies attributable to renewable energy (US\$ mln)

Year	Renewable energy	Fossil fuels
2004	19	2,039
2005	16	2,457
2006	27	3,102
2007	118	3,326
2008	181	2,954
2009	181	2,583
2010	164	2,065
2011	126	2,151
2012	62	2,813
2013	95	3,257
2014	166	2,825

Table 91 shows that on average, in the period 2004-2014, financial institutions active in the Netherlands invested 3% of their total investments in selected companies in renewable energy and 66% in fossil fuels.

Table 91 Average annual % investment in renewable energy

Year	Renewable energy	Fossil fuels
2004	1%	77%
2005	0%	66%
2006	1%	65%
2007	2%	61%
2008	4%	60%
2009	5%	66%
2010	4%	51%
2011	3%	54%
2012	2%	71%
2013	2%	78%
2014	5%	77%
Average	3%	66%

10.2.2 Rankings

This section provides a ranking of the financial institutions active in the Netherlands in terms of the value of their investments attributable to fossil fuels. Figure 205 provides a ranking of the top financial institutions on the basis of their average annual investments in the selected companies attributable to fossil fuels in the period 2009-2014. Aegon dominates the first place with the highest average annual investments in selected companies attributable to fossil fuels. On average it invested approximately US\$ 2 billion in fossil fuels annually in the period 2009-2014. In the same period it invested on average only US\$ 19 million in the selected companies attributable to renewable energy.

Figure 205 also shows that other financial institutions also have a large gap between average annual investments in selected companies attributable to fossil fuels and renewable energy.

Figure 205 Ranking of the top average annual investors in the selected companies attributable to fossil fuels (US\$ mln, 2009-2014)

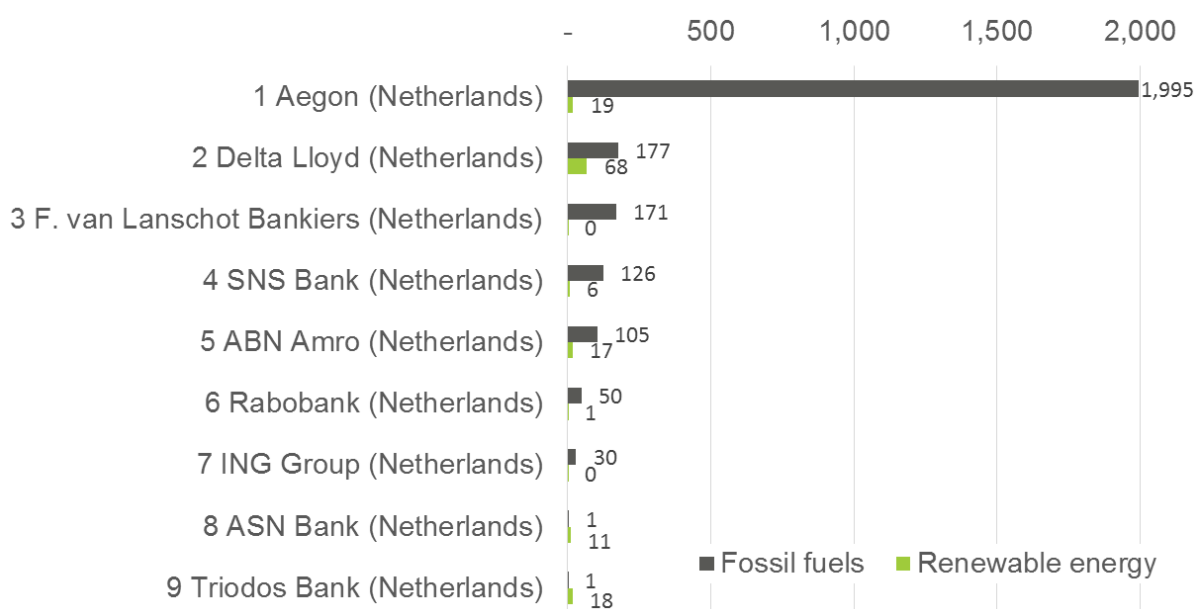


Table 92 provides an overview of the investments in the selected companies attributable to fossil fuels and renewable energy. It shows that for five of the nine financial institutions the proportion of fossil fuels in the total investments in the selected companies attributable to renewable energy and fossil fuels was higher than 90%. For two financial institutions this proportion was essentially 100%. This indicates the huge disparity between the financing of renewable energy and fossil fuels.

Nevertheless, it should be noted that the proportion of fossil fuels in the total investments in the selected companies attributable to renewable energy and fossil fuels for ASN Bank and Triodos Bank was very low, both below 10%.

Table 92 also shows the change in the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in the investments in the selected companies attributable to renewable energy and fossil fuels. Six of the nine financial institutions decreased the proportion of fossil fuels in the investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). These decreases ranged from one percentage point, to 14 percentage points (Delta Lloyd). Two financial institutions actually increased the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). F. van Lanschot Bankiers had the highest proportion increase of 14 percentage points.

Table 92 Overview of shareholdings in the selected companies attributable to fossil fuels and renewable energy (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Aegon	Netherlands	1,995	19	99%	-1%

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Delta Lloyd	Netherlands	177	68	72%	-14%
F. van Lanschot Bankiers	Netherlands	171	0	100%	14%
SNS Bank	Netherlands	126	6	95%	-1%
ABN Amro	Netherlands	105	17	86%	n/a
Rabobank	Netherlands	50	1	99%	-1%
ING Group	Netherlands	30	0	100%	0%
ASN Bank	Netherlands	1	11	9%	3%
Triodos Bank	Netherlands	1	18	4%	n/a
Total		2,654	141	95%	-2%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

10.3 Financial institution analysis

This section provides an analysis of the changes in values of loans, underwriting services and investments in shares in selected companies that can be attributed to renewable energy and fossil fuels individually for the financial institutions active in the Netherlands. The sub-sections are ordered alphabetically by bank name.

10.3.1 ABN Amro

This section provides a description of the financing provided by ABN Amro to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends. ABN Amro is currently owned by the Dutch state. It considers itself a bank in transition as the government intends to list the bank on the stock exchange.

ABN Amro signed the 2011 Global Investor Statement on Climate Change of the Global Investor Coalition on Climate Change.¹⁵¹

ABN Amro states that "[t]hrough the application of the ABN AMRO Sustainability Risk Framework, clients are screened for their actions regarding monitoring, reporting and minimising their greenhouse gas emissions in response to climate change."¹⁵²

151 Global Investor Coalition on Climate Change (2011), *2011 Global Investor Statement on Climate Change*, online: <http://1gkvgy43ybi53fr04g4elpcdhfr.wpengine.netdna-cdn.com/wp-content/uploads/2012/11/2011-Investor-Global-Statement-FINAL-NOT-EMBARGOED.pdf>, viewed in August 2015, p. 5.

152 ABN Amro (2014), *Climate Change Statement*, online: https://www.abnamro.com/en/images/040_Sustainabe_banking/Links_en_documenten/Documenten/Beleid_-_Climate_Change_Statement_2014_EN.pdf, viewed in August 2015.

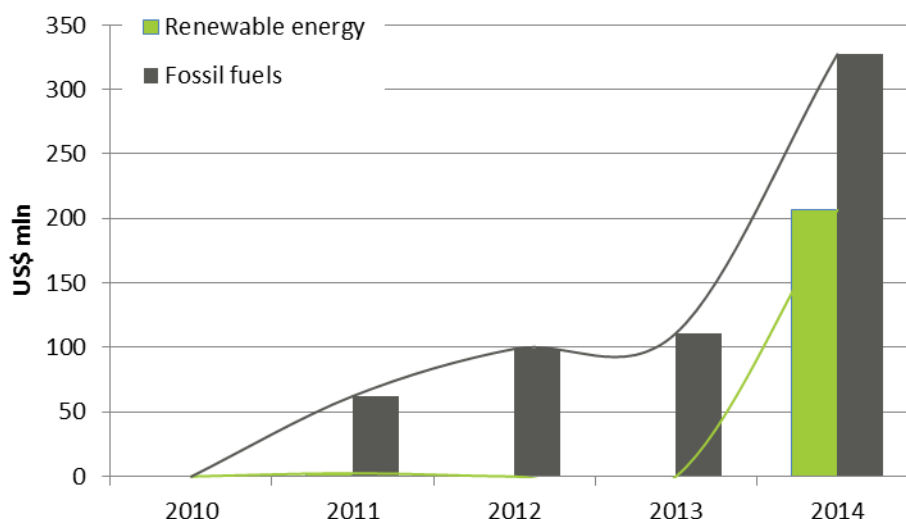
The banks adds that “[t]o reduce the carbon footprint of its existing financial services, the bank offers clients ‘Energy-Savings Loans’ that enable them to improve the energy efficiency of their operations. By working with leading consultant engineers, ABN AMRO can offer a comprehensive energy-saving solution, from a fact-finding survey of potential solutions to the technical implementation of the selected techniques and funding of the investment. Ultimately, these loans enable clients to reduce both their energy bills and the carbon footprints of their operations.”¹⁵³

Due to the significant restructuring of ABN Amro during the period of study, this research will not compare ABN Amro’s financing of and investments in the selected companies between the first and second half of the period of study. It focuses on the period after which ABN Amro considers itself in its current form, i.e. since 2010.

- **Loans**

Since 2010, ABN Amro has provided loans attributable to the selected companies attributable to renewable energy and renewable energy projects, in 2011 and 2014. In 2014, these loans amounted to approximately US\$ 207 million. Since 2011, there has also been an increase in ABN Amro’s lending to the selected companies attributable to fossil fuels.

Figure 206 ABN Amro loans to the selected companies (2004-2014)



153 ABN Amro (2014), *Climate Change Statement*, online: https://www.abnamro.com/en/images/040_Sustainable_banking/Links_en_documenten/Documenten/Beleid_-_Climate_Change_Statement_2014_EN.pdf, viewed in August 2015.

- **Underwriting**

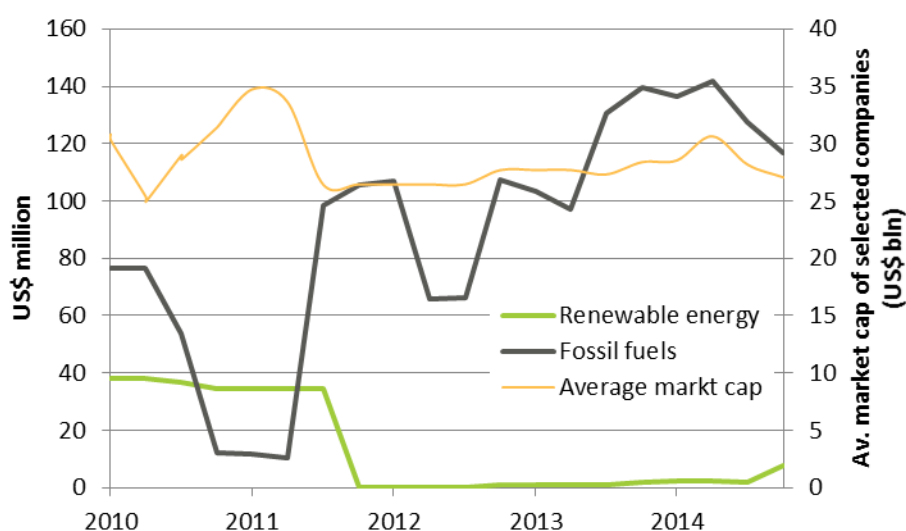
This research did not identify any underwriting services provided by ABN Amro as it currently exists.

- **Shareholdings**

It should be noted that during the verification process, ABN Amro noted some issues with the data this research had gathered from financial databases. Where ABN Amro stated that they did not have a position in a particular company as the research had identified from financial database, this position was removed from the dataset. Where ABN Amro noted a discrepancy between the identified positions and the positions maintained in their books, they did not provide details of the actual holdings nor specify the exact order of magnitude of the discrepancy to allow the researchers to adjust the dataset. Shareholdings identified through financial databases are always only snapshots of the actual positions, percentage of outstanding shares, and values of actual holdings. Stakes can change from one moment to the next. With that in mind, and the fact that ABN Amro did not provide sufficient details to adjust the dataset, this research has maintained these positions in the dataset. Therefore, readers must bear in mind that there are discrepancies with the positions identified in financial databases and ABN Amro's actual positions that, to an undeterminable degree, affect the analysis of ABN Amro's investments in selected companies below.

Since 2010 ABN Amro's average investments in selected companies attributable to renewable energy have declined. Initially, investments in selected companies attributable to fossil fuels also decreased however, since 2011, average investments in selected companies attributable to fossil fuels have generally been over US\$ 100 million. ABN Amro's average investments in the selected companies attributable to renewable energy have fluctuated between US\$ 0.06 million and US\$ 2.6 million.

Figure 207 ABN Amro shareholdings in selected companies 2004-2014



10.3.2 Aegon

This section provides an analysis of the financing provided by Aegon to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Aegon is an investor signatory to the Carbon Disclosure Project: “The Carbon Disclosure Project requests standardized climate change, water and forest information from some of the world’s largest listed companies through annual questionnaires sent on behalf of institutional investors that endorse them as ‘CDP signatories’. These shareholder requests for information encourage companies to account for and be transparent about environmental risk.”¹⁵⁴

Aegon Asset Management signed the 2009 Investor Statement on the Urgent Need for a Global Agreement on Climate Change of the Global Investor Coalition on Climate Change.¹⁵⁵

Aegon further states that, it “has also signed letters calling for action at the 2009 Summit on Climate Change in Copenhagen and at the 2010 Climate Change Conference in Cancun”.¹⁵⁶

Aegon says that, “[a]s a company with revenue generating investments of approximately EUR 560 billion our indirect environmental impact is far greater than our direct impact. In 2014 we decided we need a better understanding of the CO2 impact of our investments as a first step in deciding on possible future actions regarding climate change and carbon emissions. We selected Trucost, a consultancy firm that helps companies understand the economic consequence of their natural capital dependency, to support us in this analysis. We chose three actively managed GA investment portfolios, one from each of Aegon's largest country units that are managed against a recognized benchmark. The three portfolios combined hold approximately EUR 20 billion in assets. Trucost showed that they were up to 16.1% more carbon efficient than the benchmark.”¹⁵⁷

Aegon’s core business is not banking, therefore Table 93 does not show any changes.

Table 93 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	n/a	n/a
Fossil fuels	n/a	n/a

• Loans

As Aegon’s core activity is not banking, very few loans to the selected companies where Aegon was involved were identified. In 2013, two loans were identified. After sector activity adjustments, approximately US\$ 30 million went to renewable energy and US\$ 90 million to fossil fuels.

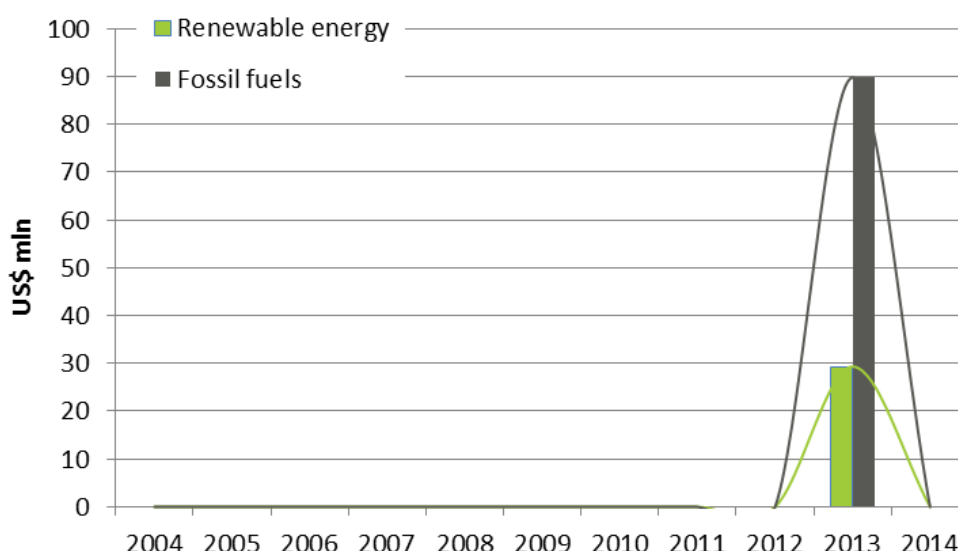
154 CDP (n.d.), “CDP signatories and members – CDP investor members”, online: <https://www.cdp.net/en-US/Programmes/Pages/Members-List.aspx>, viewed in August 2015.

155 Global Investor Coalition on Climate Change (2009), *2009 Investor Statement on the Urgent Need for a Global Agreement*, online: <http://1gkvgy43ybi53fr04g4elpcdhfr.wpengine.netdna-cdn.com/wp-content/uploads/2012/11/2009-Investm-or-Statement-on-a-Global-Agreement-FINAL.pdf>, viewed in August 2015, p. 8.

156 Aegon (2011, 11 August), “Aegon’s Green Goal”, online: <http://www.aegon.com/en/Home/Investors/News/News/Archive/Aegons-Green-Goal/>, viewed in August 2015.

157 Aegon (2015, 18 June), “Environmental Protection”, online: <http://www.aegon.com/en/Home/Sustainability/Environmental-Protection/>, viewed in August 2015.

Figure 208 Aegon loans to the selected companies (2004-2014)



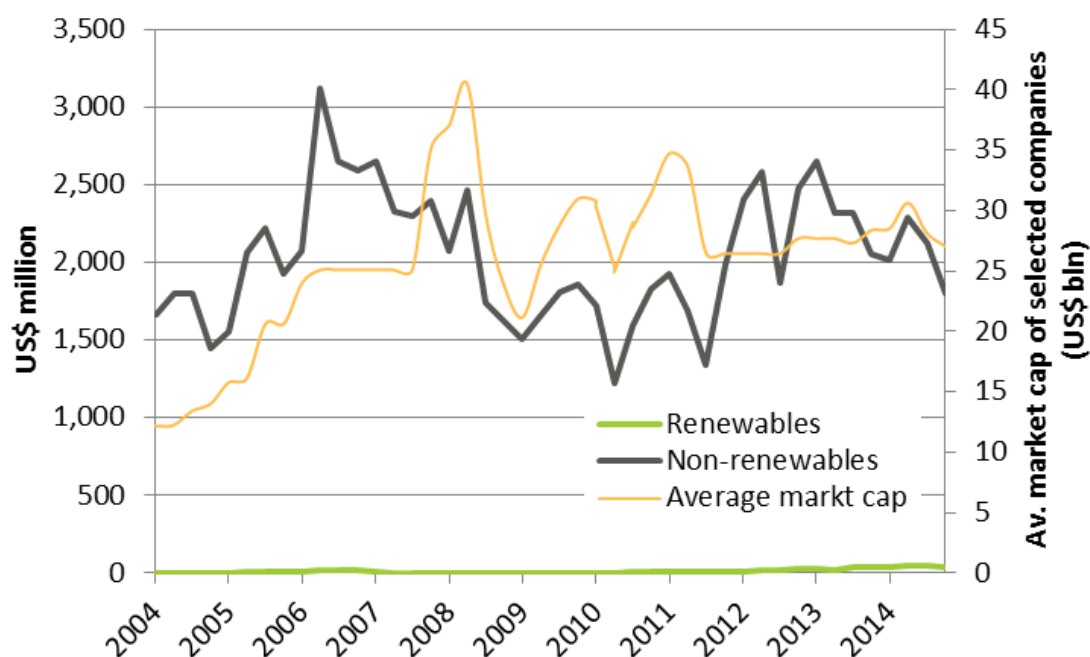
- **Underwriting**

This research did not identify any underwriting services provided by Aegon to the selected companies.

- **Shareholdings**

In the second half of the period of study, average investments in selected companies, attributable to renewable energy, increased by 328%. In terms of value, the increase was from US\$ 4 million to US\$ 18 million. This contrasts with the decrease in value of investments in selected companies attributable to fossil fuels. In the second half of the period of study, average investments in selected companies, attributable to fossil fuels, decreased by 6%, from US\$ 2 billion to US\$ 1.9 billion. Figure 209 provides a more detailed overview of Aegon's shareholdings of the selected companies. Investments in selected companies attributable to fossil fuels generally followed the fluctuations in average market capitalization of the selected companies. Investments in selected companies attributable to fossil fuels have generally been over US\$ 1.5 billion. Only in 2014, did investments in selected companies attributable to renewable energy exceed US\$ 30 million.

Figure 209 Aegon shareholdings in selected companies 2004-2014



10.3.3 ASN Bank

This section provides a description of the financing provided by ASN to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends. ASN Bank is focussed on sustainability. It should be noted that a number of companies included in the scope of this study for their contributions to renewable energy are excluded by ASN Bank. This is because the other business activities of these companies are excluded by ASN Bank.

ASN Bank signed the 2009 Investor Statement on the Urgent Need for a Global Agreement on Climate Change of the Global Investor Coalition on Climate Change.¹⁵⁸

ASN Bank aims to be climate neutral in its investments by 2030. By 2014, they had realized 45%.¹⁵⁹

In March 2014, ASN Bank stated, "ASN Bank considers the problem of climate change a very urgent matter. It requires all of us to do whatever we can to contribute to a solution. As a bank, we intend to do so by personally contributing as much as we can and being a role model for other organizations. For this reason, we have made it our goal to achieve net carbon neutrality in our investments by 2030".¹⁶⁰

158 Global Investor Coalition on Climate Change (2009), *2009 Investor Statement on the Urgent Need for a Global Agreement*, online: <http://1gkvg43ybi53fr04g4elpcdhfr.wpengine.netdna-cdn.com/wp-content/uploads/2012/11/2009-Investm-or-Statement-on-a-Global-Agreement-FINAL.pdf>, viewed in August 2015, p. 8.

159 ASN Bank (2015), *Jaarverslag 2014*, pp. 26-27.

160 ASN Bank (2013, March), "Our Vision on Climate Change", online: <http://www.asnbank.nl/web/file?uuid=088c13ea-c476-41e7-89c1-7f8dff509c99&owner=9cce6a9-c451-451a-963a-e931fe46c086&contentid=2216>, viewed in August 2015, p. 6.

Table 94 shows that ASN Bank does not finance fossil fuels. In the second half of the period of study, ASN Bank's loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects increased by 909%. The proportion of total loans and underwriting did not change because 100% of their loans and underwriting went to renewable energy.

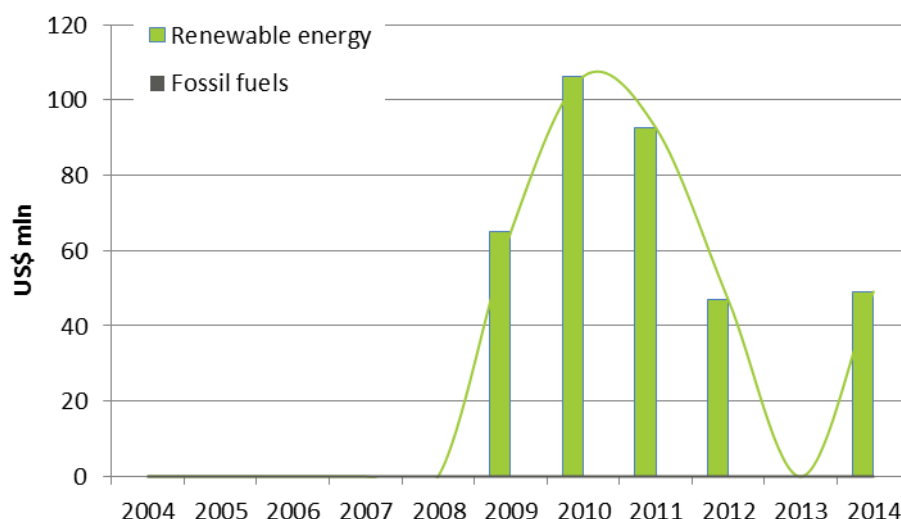
Table 94 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	909%	0%
Fossil fuels	0	n/a

- **Loans**

The above description of changes percentage of financing to renewable energy relate to only to loans. This research did not identify any underwriting for selected companies and renewable energy projects in which ASN Bank was involved. Figure 210 shows that there has been a decline in loans to the selected companies attributable to renewable energy since 2010, however in 2014 there again seems to be an increase.

Figure 210 ASN Bank loans to the selected companies (2004-2014)



- **Underwriting**

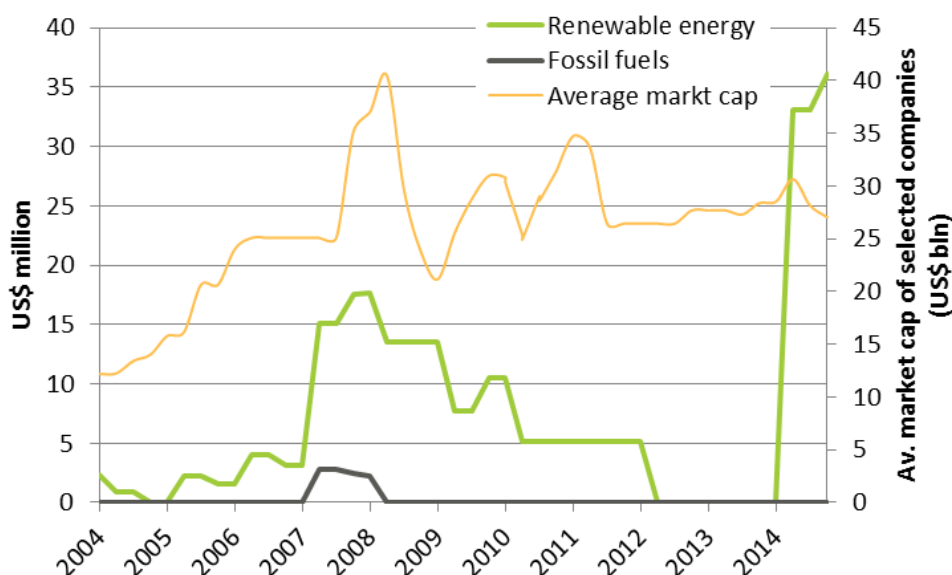
This research did not identify any underwriting services provided by ASN Bank to the selected companies.

- **Shareholdings**

ASN Bank funds are managed by third parties. As such, the research into ASN Bank's shareholdings was done from the fund level rather than from the company level. The fund level data was less complete. Nevertheless, there was sufficient data for an analysis.

In the second half of the period of study, ASN Bank's average investment in renewable energy increased by 5%. Investments in selected companies attributable to fossil fuels decreased by 100%. This the result of divestment from Iberdrola. Figure 211 shows ASN Bank's investments in selected companies attributable to renewable energy generally followed the fluctuations of the average market capitalization of the selected companies. For much of the period of study, investments in selected companies attributable to renewable energy have averaged over US\$ 5 million, while there were no investments in selected companies attributable to fossil fuels. There was a gap in the data for 2012-2013.

Figure 211 ASN Bank shareholdings in selected companies 2004-2014



10.3.4 Delta Lloyd

This section provides a description of the financing provided by Aegon to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In 2015, Delta Lloyd states that it expects companies to reduce their greenhouse gas emissions.¹⁶¹

- **Loans and underwriting**

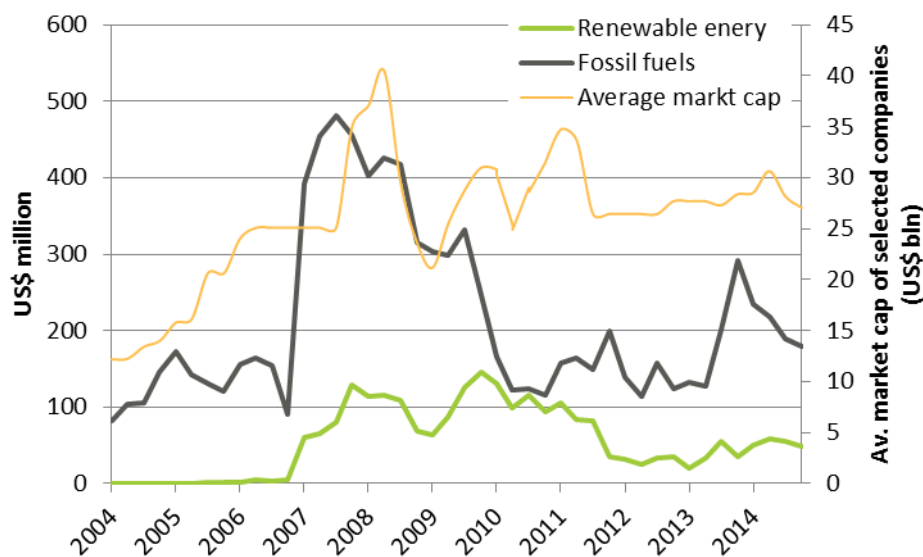
This research did not identify any loans or underwriting services provided by Delta Lloyd to the selected companies.

- **Shareholdings**

¹⁶¹ Delta Lloyd (2015), *Focusthema: Klimaatverandering*, online: <http://www.deltalloydassetmanagement.nl/media/449050/Themavisie%20Klimaatverandering.pdf>, viewed in August 2015, p. 1.

In the second half of the period of study, Delta Lloyds average investments in selected companies attributable to renewable energy increased by 40%. Average investments in selected companies attributable to fossil fuels, on the other hand, decreased by 37%. Figure 212 shows that between 2007 and 2011 average investments in selected companies attributable to renewable energy rose above US\$ 100 million. More recently, investments in selected companies attributable to renewable energy have fluctuated between US\$ 30 million and US\$ 60 million. Investments in selected companies attributable to fossil fuels, on the other hand, have fluctuated between US\$ 120 million and US\$ 300 million.

Figure 212 Delta Lloyd shareholdings in selected companies 2004-2014



10.3.5 F. van Lanschot Bankiers

This section provides an analysis of the financing provided by F. Van Lanschot Bankiers to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In March 2014, Van Lanschot stated that it expects companies to reduce their greenhouse gas emissions: “Additionally, Van Lanschot expects its clients receiving credit to use as little water as possible, prevent water pollution, and reduce the emission of harmful particulates and greenhouse gas (both in absolute and relative terms).”¹⁶²

In October 2014, Van Lanschot, and its subsidiary Kempen, signed the Global Investor Statement on Climate Change of the Institutional Investors Group on Climate Change. “This statement is a UNPRI initiative, and emphasizes that as financial institutions Kempen and Van Lanschot want to make a positive contribution to mitigating climate change.”¹⁶³

- **Loans and underwriting**

¹⁶² Van Lanschot (2014, March), *Details van het verantwoord kredietbeleid*, online: <https://corporate.vanlanschot.nl/media/1395/van-lanschot-vo-kredietbeleid-7-maart-2014.pdf>, viewed in August 2015, p. 5.

¹⁶³ Van Lanschot (2014, 30 October), “Van Lanschot oogst waardering voor haar klimaatbeleid”, online: <https://corporate.vanlanschot.nl/nl/nieuws/nieuwsberichten/van-lanschot-oogst-waardering-voor-haar-klimaatbeleid>, viewed in August 2015.

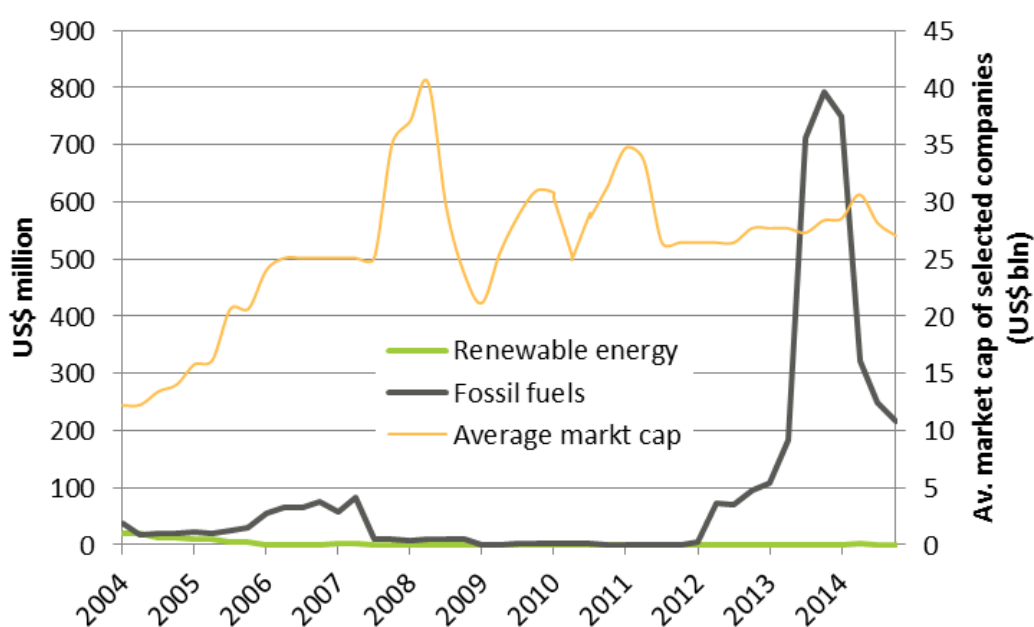
This research did not identify any loans or underwriting provided by F. Van Lanschot Bankiers to the selected companies.

- **Shareholdings**

In terms of the average annual investments in selected companies attributable to renewable energy, Van Lanschot decreased its investments by 91% in the second half of the period of study. In the first half the period of study, investments in selected companies attributable to renewable energy averaged around US\$ 4 million per year. In the second half of the period of study, this fell to less than US\$ 0.5 million.

Shareholdings of the selected companies attributable to fossil fuels, on the other hand, increased by 446%. Average annual shareholdings rose from approximately US\$ 27 million to US\$ 149 million. The proportion of total average investments in selected companies attributable to renewable energy decreased by 11%. The proportion of average total annual investments attributable to fossil fuels increased by 18%. Figure 102 presents a more detailed picture of the developments. Let's hope that the commitments made by Van Lanschot and its subsidiary Kempen in 2014 will have a marked effect on its investments in selected companies attributable to renewable energy in the future, because currently the levels are disappointingly low.

Figure 213 F. Van Lanschot Bankiers shareholdings in selected companies 2004-2014



10.3.6 ING Group

This section provides description of the financing provided by the ING Group to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In September 2009, ING Group subscribed to the investor statement of the Corporate Climate Communique, similar to Barclays (see section 4.3.5) and the Bank of America (see section 4.3.2).¹⁶⁴ It has since endorsed every Corporate Climate Communique since 2009, most recently the 2014 Trillion Tonne Communique.¹⁶⁵

Table 95 shows that ING Group increased its loans and underwriting services attributable to renewable energy by 12% from the first half the period of study to the second. This minor increase stands in stark contrast to its 67% increase in loans and underwriting to the selected companies attributable to fossil fuels. While ING has endorsed every Corporate Climate Communique since 2009 it has also increased its financing to fossil fuels precisely in the period after this endorsement. As a proportion of its total loans and underwriting, loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects decreased by 3% while loans and underwriting to the selected companies attributable to fossil fuels increased by 4%.

Table 95 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	12%	-3%
Fossil fuels	67%	4%

- **Loans**

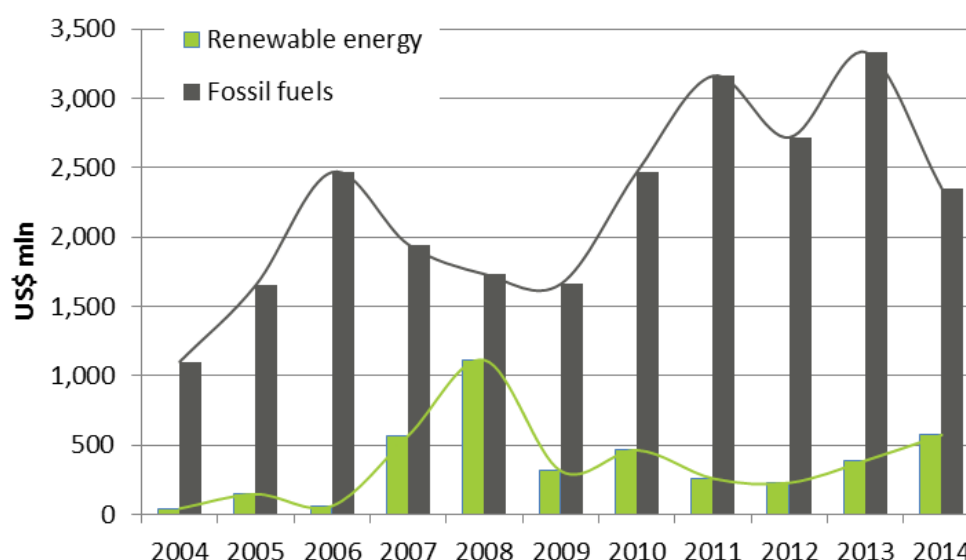
ING's loans to the selected companies attributable to fossil fuels increased by 53% from the first half of the period of study to the second. Loans to the selected companies attributable to renewable energy actually decreased by 1%.

Figure 51 provides a detailed overview of ING Group's loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. Loans to the selected companies attributable to fossil fuels declined slightly during the global economic recession, but increased rapidly thereafter. Loans to the selected companies attributable to renewable energy increased in the years preceding the economic crisis, declining at the height of the crisis. Loans to the selected companies attributable to renewable energy fluctuated between 2009 and 2014, showing a gradual upward trend from 2012 to 2014.

164 Copenhagen Communique (2009). *Signatories to the Copenhagen Communique – 2009*, online: <http://www.climatecommuniques.com/About/Copenhagen.aspx>, viewed in August 2015.

165 ING Group (n.d.), "Cap carbon at 1 trillion tonnes", online: <http://www.ing.com/ING-in-Society/Sustainability/Sustainability-news/Snws-1/Cap-carbon-at-1-trillion-tonnes.htm>, viewed in September 2015.

Figure 214 **ING Group loans to the selected companies (2004-2014)**



- **Underwriting**

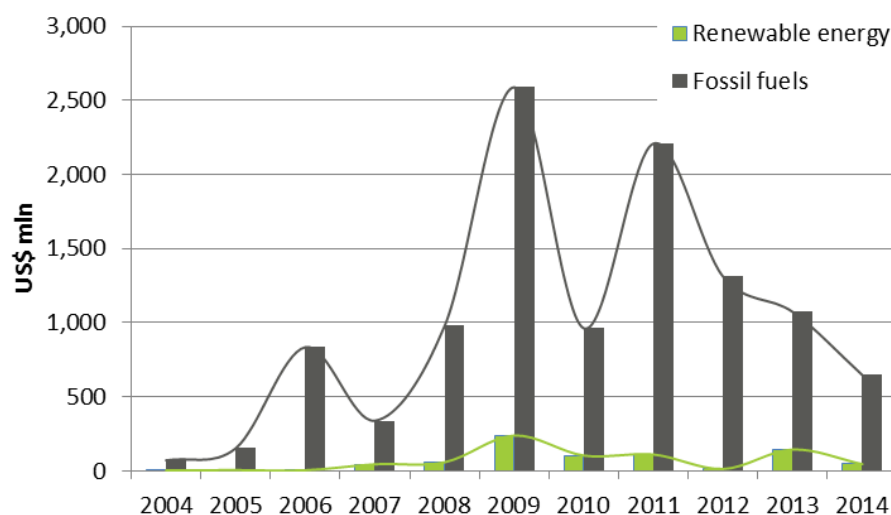
In the second half of the period of study, ING's underwriting services to renewable energy increased by 126%. This achievement is somewhat undermined by the fact that its underwriting services to the selected companies attributable to fossil fuels increased by 104%, and the overall increase in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects only increased by 12%.

Figure 52 provides an overview of the annual changes in underwriting services attributable to renewable energy and fossil fuels. Throughout the period of study underwriting services to renewable energy have been minimal, never exceeding US\$ 250 million. Underwriting services to the selected companies attributable to fossil fuels increased in to the highest levels in 2009, showing a gradual fluctuating decline thereafter, though not reaching below US\$ 500 million.

Is ING Group finally decreasing its support for fossil fuels after endorsing every Corporate Climate Communique since 2009, and most recently the 2014 Trillion Tonne Communique?¹⁶⁶ If so, why is it not making more of an effort to increase its support of renewable energy?

¹⁶⁶ ING Group (n.d.), "Cap carbon at 1 trillion tonnes", online: <http://www.ing.com/ING-in-Society/Sustainability/Sustainability-news/Snws-1/Cap-carbon-at-1-trillion-tonne-s.htm>, viewed in September 2015.

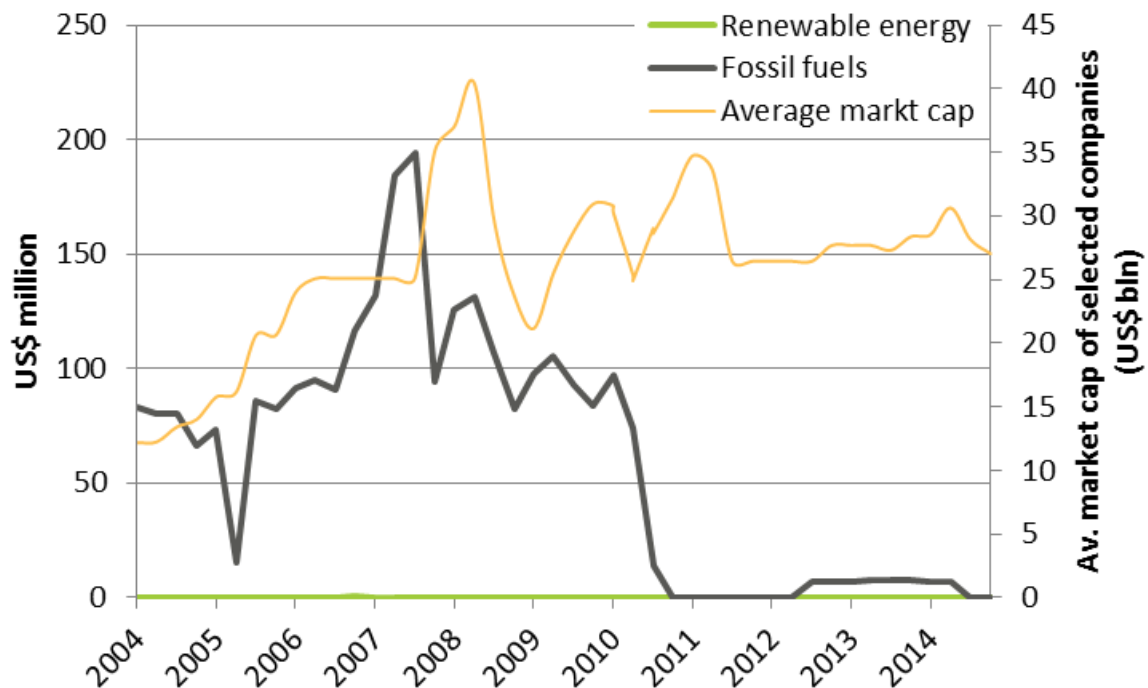
Figure 215 ING Group underwriting services to the selected companies (2004-2014)



- **Shareholdings**

Figure 216 shows a sharp decline in investments in selected companies attributable to fossil fuels in 2010. This research did not find any investments of ING Group in companies attributable to renewable energy.

Figure 216 ING Group shareholdings in selected companies 2004-2014



10.3.7 NIBC Holding

This section provides an analysis of the financing provided by NIBC Holding to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

NIBC signed the 2011 Global Investor Statement on Climate Change of the Global Investor Coalition on Climate Change.¹⁶⁷

In 2013, NIBC stated that it “assesses business opportunities and client initiatives that contribute to sustainable development positively, such as reduction of (carbon) emissions by using best available technologies, energy saving initiatives, compensation of carbon emissions, transfer to the use of renewable energy, and the development of energy efficient products or production methods. We look to work with clients that want to engage in development of these.[....]. In addition to the risks and standards mentioned in our Sustainability Policy and sector specific policies, NIBC considers the following: - Reduction of (carbon) emissions by using best available technologies.”¹⁶⁸

Table 96 shows that in the second half of the period of study, NIBC Holding decreased its loans and underwriting to the selected companies attributable to fossil fuels by 100%. The proportion of loans and underwriting to the selected companies attributable to fossil fuels also decreased by 100%. There was an increase of 100% in the proportion of loans and underwriting attributable to renewable energy.

Table 96 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	n/a	100%
Fossil fuels	-100%	-100%

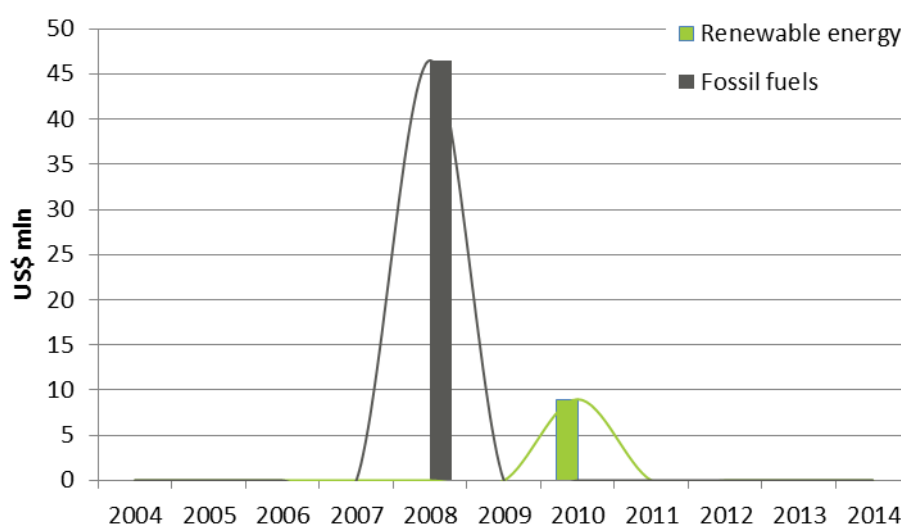
- **Loans**

The above description of changes in percentage and proportion of financing to renewable energy and fossil fuels all relate to NIBC Holding’s loan portfolio. This research did not identify any underwriting services provided to the selected companies and renewable energy projects that involved NIBC. Figure 217 shows the details of loans to the selected companies provided by NIBC Holding.

167 Global Investor Coalition on Climate Change (2011), *2011 Global Investor Statement on Climate Change*, online: <http://1gkvgy43ybi53fr04g4elpcdhfr.wpengine.netdna-cdn.com/wp-content/uploads/2012/11/2011-Investor-Global-Statement-FINAL-NOT-EMBARGOED.pdf>, viewed in August 2015, p. 7.

168 NIBC (2013), *NIBC Sustainability Policy: Supplement on Climate Change and Environment*, online: https://www.nibc.com/fileadmin/user_upload/Documenten/Corporate_Social_Sustainability/2013_Climate_Change_and_Environment_Supplement.pdf, viewed in August 2015.

Figure 217 NIBC Holding loans to the selected companies (2004-2014)



- **Underwriting**

This research did not identify any underwriting services provided by Delta Lloyd to the selected companies.

- **Shareholdings**

This research did not identify any investments by NIBC Holding in the shares of the selected companies.

10.3.8 Rabobank

This section provides a description of the financing provided by the Rabobank to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In its 2007 annual sustainability report, Rabobank stated that “[c]limate change has far-reaching effects on our planet. For us at the Rabobank Group, climate change is a crucial topic in our corporate social responsibility (CSR) policy. We are taking on a wide variety of initiatives to help combat climate change. Our approach to this topic is broad-based, from raising customer and staff awareness, incorporating it in our own business operations, to introducing climate-friendly products and services, and funding sustainable initiatives.”¹⁶⁹

It added that “[g]overnments and NGOs feel that, with this position, commercial banks have a responsibility to take on a pioneering role in the private sector in fighting ongoing climate change. Internationally speaking, Rabobank focuses on the food & agri sector and clean technology (‘clean tech’). Rabobank has only a limited market share in funding the coal, oil and gas industries and mining.”¹⁷⁰

169 Rabobank (2008, May), *Annual Sustainability Report 2007*, p. 38-39.

170 Rabobank (2008, May), *Annual Sustainability Report 2007*, p. 38-39.

Rabobank concluded that “[o]ur goal is to use our financial services to effectively add to the transition from a high-CO₂ to a low-CO₂ economy. We regard the provision of financial services to enterprises specialising in developing and applying energy-efficient and renewable energy technology as a first step, with the provision of financial services to enterprises active in the broader field of clean tech being the second step.”¹⁷¹

Table 97 shows that in the second half of the period of study, Rabobank’s loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects increased by 236%. In the same period, financing of fossil fuels increased by 23%. The proportion of total loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects increased by 18%. The proportion of loans and underwriting to the selected companies attributable to fossil fuels decreased by 8%.

Table 97 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	236%	18%
Fossil fuels	23%	-8%

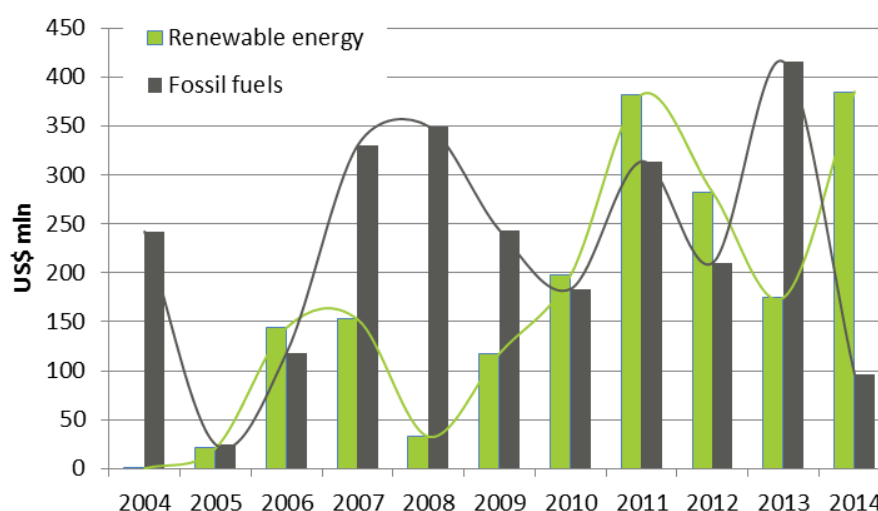
- **Loans**

In the second half of the period of study, loans to the selected companies attributable to renewable energy increased by 261%. In the first half of the period of study, loans to the selected companies attributable to renewable energy amounted to US\$ 409 million. In the second half of the period of study loans to the selected companies attributable to renewable energy increased to US\$ 1.5 billion. This contrasts with Loans to the selected companies attributable to fossil fuels. These increased by 13%, in the second half of the period of study. In the first half of the period of study, loans to the selected companies attributable to fossil fuels amounted to US\$ 1.2 billion, in the second half they amounted to US\$ 1.3 billion.

Figure 218 provides a more detailed picture. In the first half of the period of study, loans to the selected companies attributable to fossil fuels often exceeded those to renewable energy. However, as of 2010, loans to the selected companies attributable to renewable energy generally have exceeded Loans to the selected companies attributable to fossil fuels.

171 Rabobank (2008, May), *Annual Sustainability Report 2007*, p. 38-39.

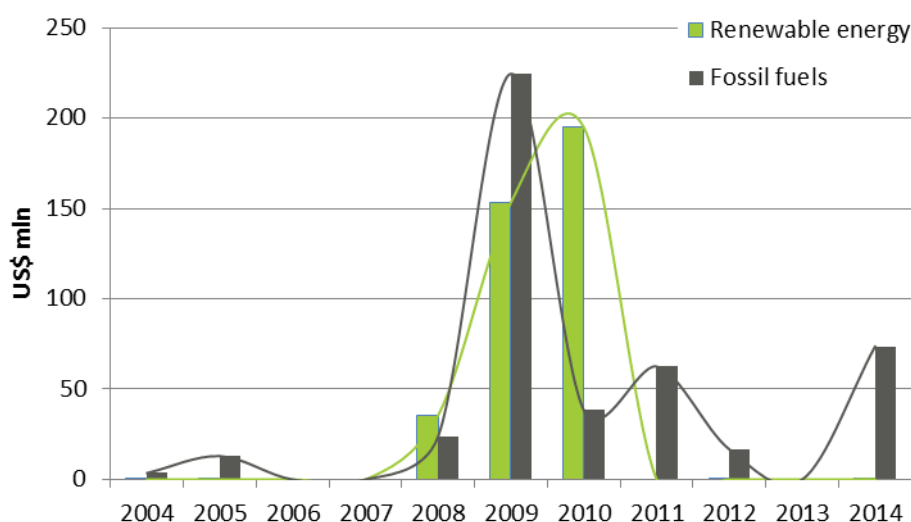
Figure 218 Rabobank loans to the selected companies (2004-2014)



- Underwriting**

In the second half of the period of study, underwriting to renewable energy increased by 142%. In the same period, underwriting to fossil fuels increased by 99%. Figure 219 shows that underwriting by Rabobank has generally been low, particularly to fossil fuels. However, apart from the period 2008-2010, Rabobank has not provided underwriting to renewable energy.

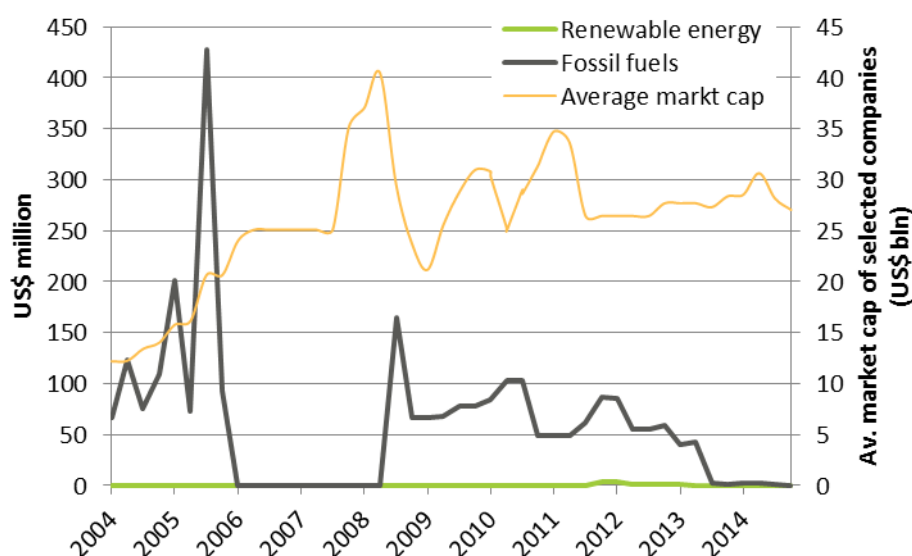
Figure 219 Rabobank underwriting services to the selected companies (2004-2014)



- Shareholdings**

As Figure 220 shows, Rabobank has generally not invested in the selected companies attributable to renewable energy. It has, however, invested in fossil. The level of investments in selected companies attributable to fossil fuels decreased in the second half of the period of study.

Figure 220 Rabobank shareholdings in selected companies 2004-2014



10.3.9 SNS Bank

This section provides an analysis of the financing provided by SNS Bank to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

SNS maintains targets regarding the private mortgages portfolio: "Our bank brands are aware of the impact that lifestyle has on climate change. That is why we set a target in 2014 to reduce the CO2 emissions (average per home) for our entire mortgage portfolio by 20% in 2020. We intend to achieve this goal by encouraging our customers to save energy and generate renewable energy. A potentially powerful instrument to use is offering lower interest rates to mortgage customers with energy-efficient homes."¹⁷²

This research did not identify any commitments regarding financed emissions for corporate loans or underwriting.

- **Loans and underwriting**

This research did not identify any loans or underwriting services provided by SNS Bank to the selected companies.

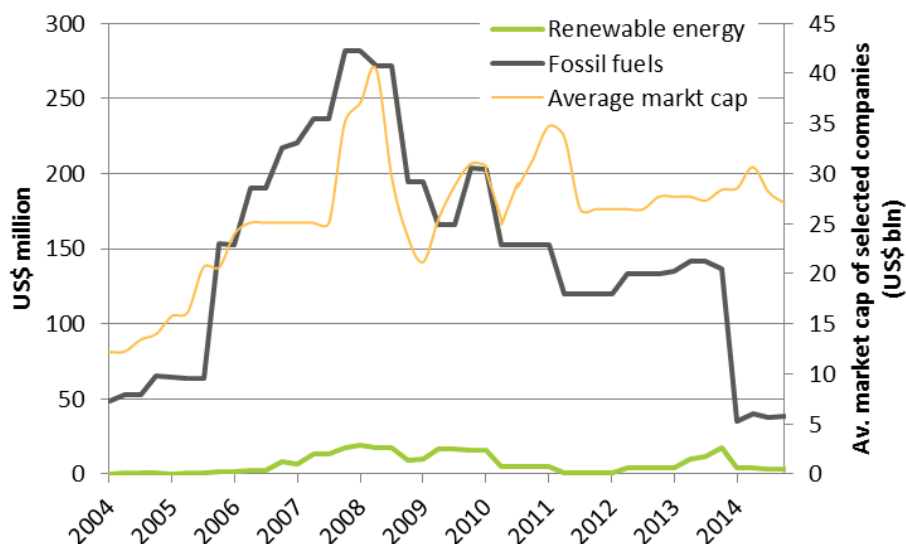
- **Shareholdings**

SNS Bank funds are managed by third parties. As such, the research into SNS Bank's shareholdings was done from the fund level rather than from the company level. The fund level data was less complete. Nevertheless, there was sufficient data for an analysis.

¹⁷² SNS Reaal (2015), *Annual Report 2015*, p. 205.

In the second half of the period of study, SNS Bank's average investments, in renewable energy, decreased by 27%. In the same period, investments in selected companies attributable to fossil fuels also decreased by 24%. Figure 221 shows that SNS Bank's average investments, in renewable energy, since 2010 have fluctuated between US\$ 0.8 million and approximately US\$ 12 million. Investments in selected companies attributable to fossil fuels, on the other hand, have fluctuated between US\$ 40 million and US\$ 200 million.

Figure 221 SNS Bank shareholdings in selected companies 2004-2014



10.3.10 Triodos Bank

This section provides an analysis of the financing provided by Triodos Bank to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

Regarding energy and climate change Triodos says, “For a transition from a carbon-based economy to a sustainable economy, it’s essential to reduce energy demand, to use energy as efficiently as possible, and to invest massively in renewable energy systems, while switching to low carbon fuels.”¹⁷³

Triodos Investment Management signed the 2009 Investor Statement on the Urgent Need for a Global Agreement on Climate Change of the Global Investor Coalition on Climate Change.¹⁷⁴

Table 98 shows that Triodos Bank provided 166% more loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects in the second half of the period of study than the first. Triodos Bank did not provide any loans or underwriting to fossil fuels. 100% of all Triodos Bank loans and underwriting services to the selected companies are attributable to renewable energy.

173 Triodos Bank (n.d.), “03 Energy & Climate”, online: <https://www.triodos.com/en/about-triodos-bank/what-we-do/our-expertise-overview/energy-climate/>, viewed in September 2015.

174 Global Investor Coalition on Climate Change (2009), *2009 Investor Statement on the Urgent Need for a Global Agreement*, online: <http://1gkvgy43ybi53fr04g4elpcdhfr.wpengine.netdna-cdn.com/wp-content/uploads/2012/11/2009-Investm-or-Statement-on-a-Global-Agreement-FINAL.pdf>, viewed in August 2015, p. 11.

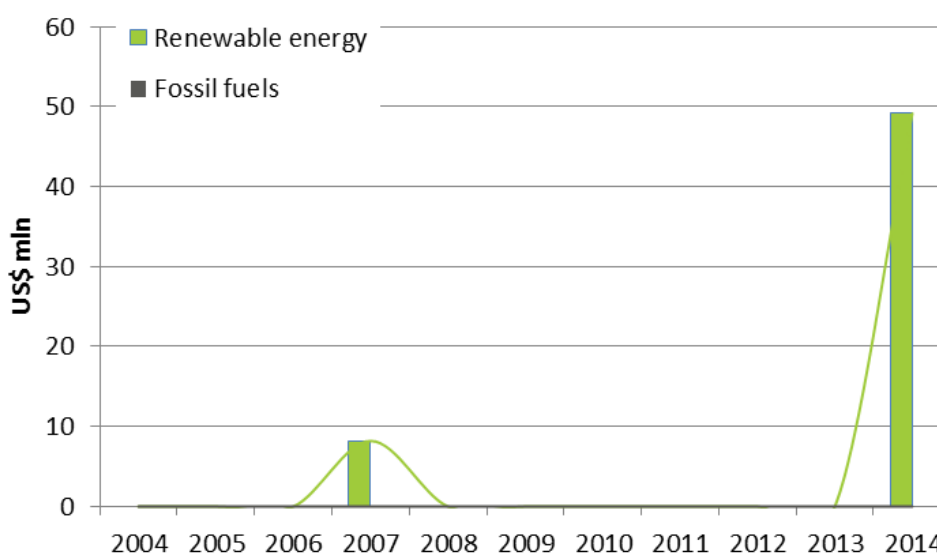
Table 98 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	166%	0%
Fossil fuels	n/a	n/a

- Loans**

Triodos Bank provided 499% more loans to the selected companies attributable to renewable energy in the second half of the period of study. Figure 109 shows that this is mainly due to loans provided in 2014. Triodos Bank is likely to be providing more bilateral loans throughout the period, explaining the lack of data for a number of years. Of course, other financial institutions also provide bilateral loans. However, the impacts may be more pronounced for Triodos.

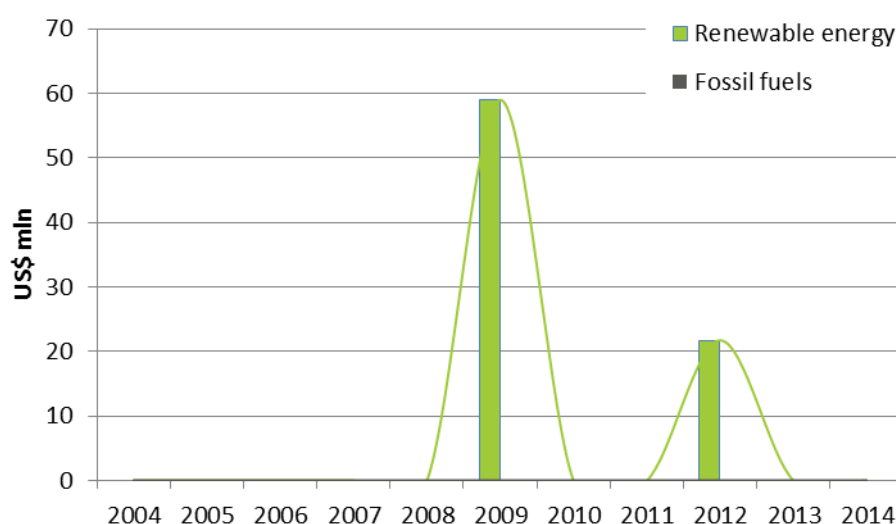
Figure 222 Triodos loans to the selected companies (2004-2014)



- Underwriting**

Triodos Bank provided 74% more underwriting services to renewable energy in the second half of the period of study and in the first. Figure 110 shows that this is mainly due to underwriting services provided in the second half of 2009 and 2012.

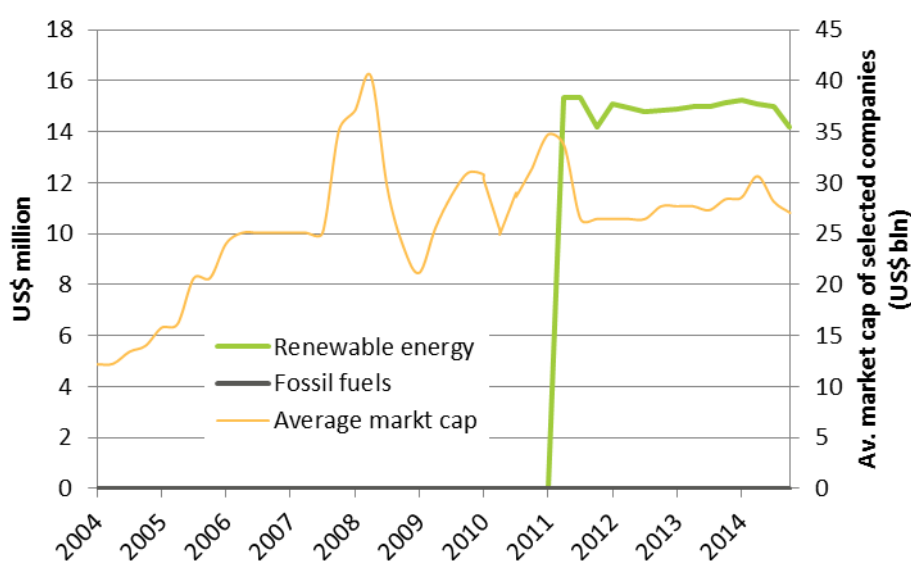
Figure 223 Triodos underwriting services to the selected companies (2004-2014)



- Shareholdings**

Many Triodos funds are managed by a third party (Delta Lloyd Asset Management, see section 10.3.4). As such, the research into Triodos' shareholdings was done from the fund level rather than from the company level. The fund level data was less complete. It only contained information on investments in the selected companies as of 2011. Figure 111 shows that Triodos has only invested in selected companies attributable to renewable energy and renewable energy projects. Renewable energy investments account for 96% of Triodos' investments in all selected companies. Other sources of energy not included in the scope of this study's definition of renewable energy account for the remaining 4%.

Figure 224 Triodos shareholdings in selected companies 2004-2014

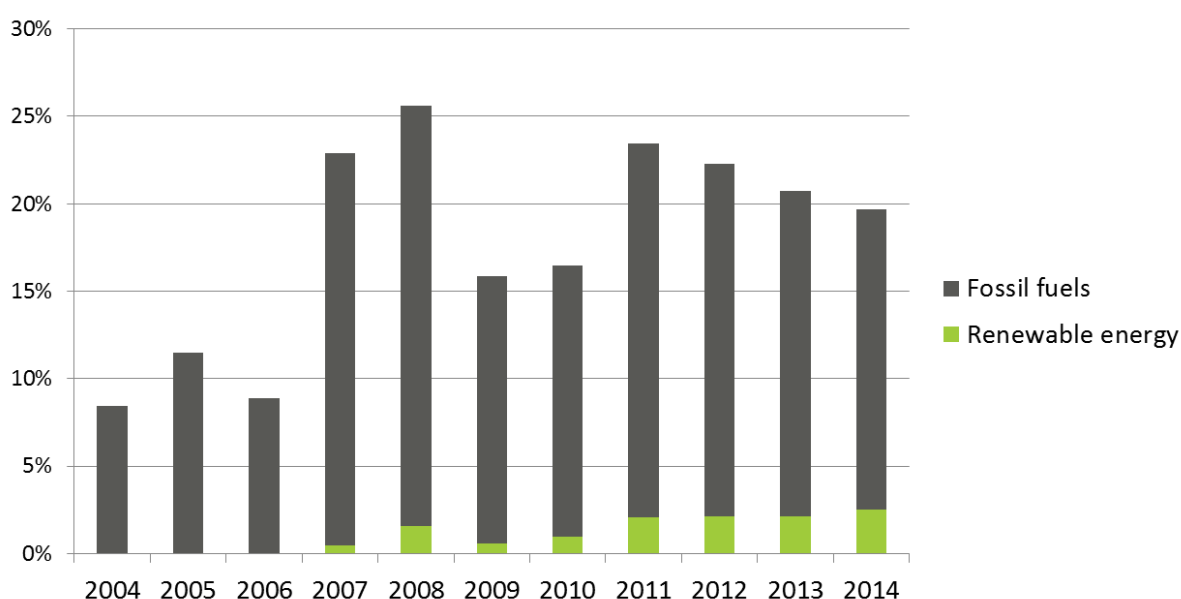


Chapter 11 Sweden

This chapter outlines the trends in financing of the eight selected financial institutions active in Sweden towards the selected companies attributable to fossil fuels (coal mining and oil & gas), renewable energy input equipment manufacturers (solar panels, concentrated solar power plants, wind turbine manufacturers, and geothermal power turbine and engineering companies), renewable energy projects, and utility companies, over the period 2004-2014.

Figure 225 provides an overview of the changes in portfolio composition of the researched utility companies active Sweden. It shows that there has been a gradual increase in renewable energy (solar, wind and geothermal). The proportions of installed capacity that a fossil fuels are still much higher. It is also important to note that the installed capacity of companies active in Sweden also includes hydropower and nuclear power, both not included in the scope of this study (see section 2.3.3 and section 2.3.4).

Figure 225 Annual portfolio proportions of researched utility companies active in Sweden



11.1 Loans and underwriting

This section provides an analysis of the loans and underwriting provided by financial institutions active in Sweden to the selected companies and renewable energy projects. Section 11.1.1 provides an outline of the annual changes in the financing to the selected companies. Section 11.1.2 ranks the financial institutions active in Sweden according to their financing of fossil fuels.

11.1.1 Annual analysis

Figure 226 shows that there were strong fluctuations in the loans provided by financial institutions active in Sweden to the selected companies attributable to fossil fuels. Notable is the large difference in loans to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. In 2012, however, this gap was the smallest. Loans to the selected companies attributable to renewable energy only exceeded US\$ 500 million for three years. While loans to the selected companies attributable to fossil fuels generally exceeded US\$ 1.5 billion.

Figure 226 Annual loans provided by financial institutions active in Sweden to the selected companies

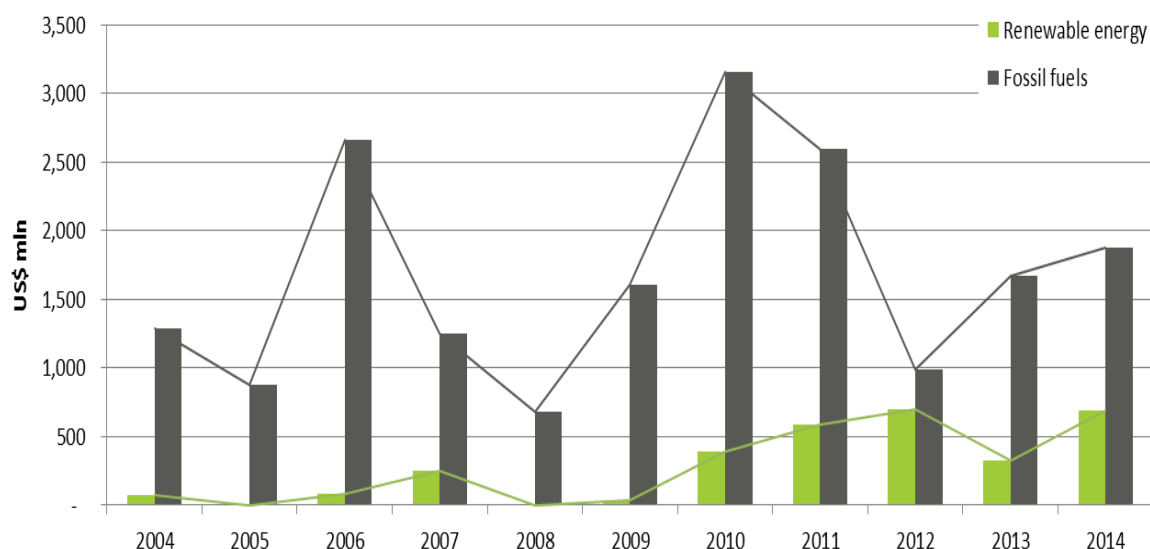
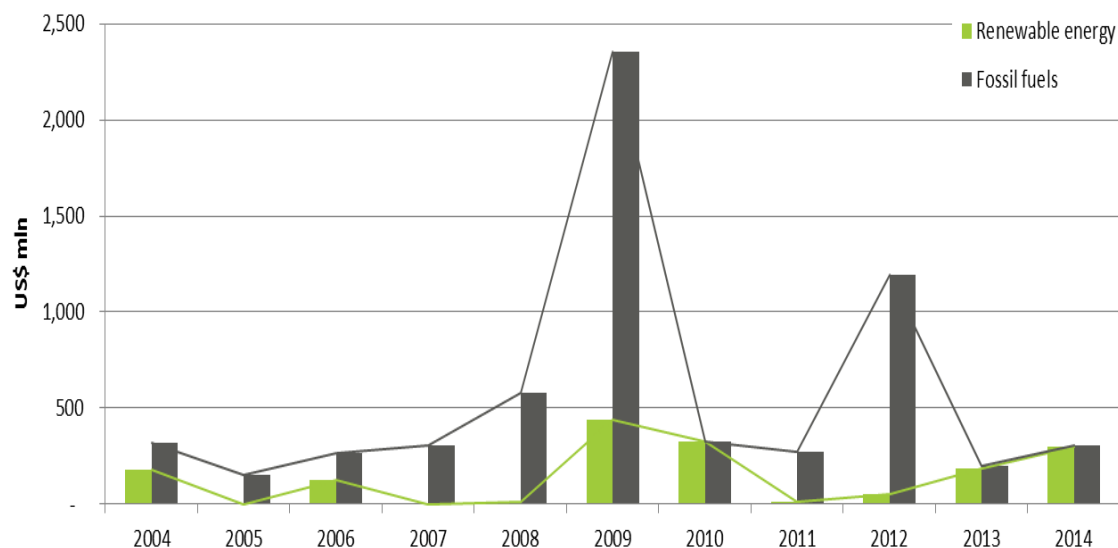


Figure 227 shows that underwriting to renewable energy and fossil fuels shows very different trends. The difference between underwriting for fossil fuels and renewable energy is generally very small, apart from 2009 and 2012.

Figure 227 Annual underwriting services provided by financial institutions active in Sweden to the selected companies



11.1.2 Rankings

This section provides a ranking of the financial institutions active in Sweden in terms of the value of their loans and underwriting services attributable fossil fuels. Figure 228 shows the ranking of the top financiers of the selected companies attributable to fossil fuels for the period 2009 to 2014. Zooming in on the most recent five years provides a more current picture of the financial activities of the selected financial institutions with regard to their financing of the selected companies attributable to fossil fuels and renewable energy. The top three places are occupied by financial institutions Nordea, SEB and Danske Bank. In the period 2009 to 2014, Nordea provided approximately US\$ 8 billion to the selected companies attributable to fossil fuels. In the same period it only provided approximately US\$ 2 billion in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects.

Figure 228 shows that this difference in financing to fossil fuels and renewable energy is not common to all financial institutions active in Sweden. SEB provided approximately US\$ 4 billion to the selected companies attributable to fossil fuels. In the same period it also provided approximately US\$ 2 billion in loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects.

Figure 228 Ranking of the top financiers of the selected companies attributable to fossil fuels (loans & underwriting, US\$ mln, 2009-2014)

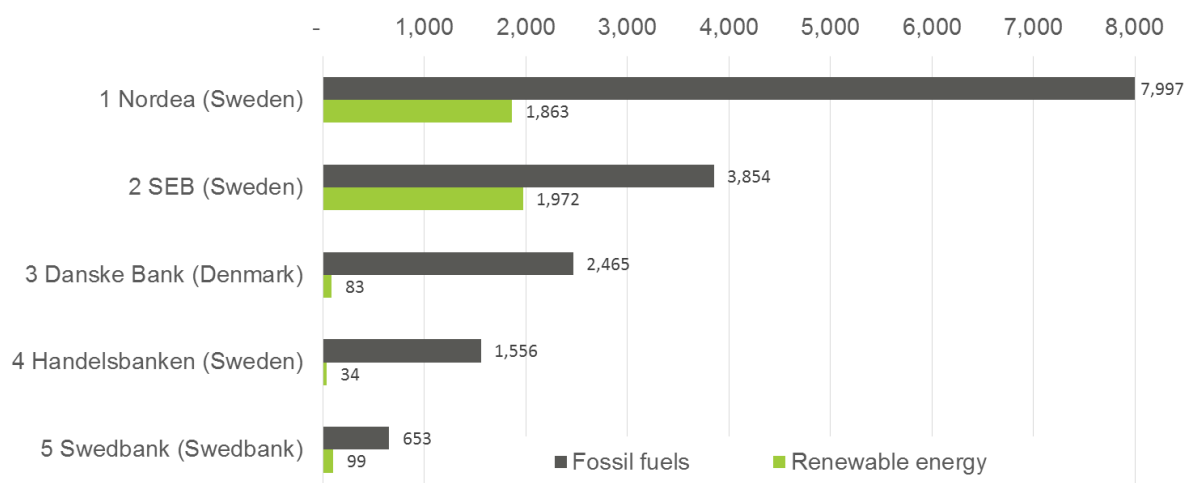


Table 99 provides an overview of the loans and underwriting to the selected companies attributable to fossil fuels and renewable energy. It shows that for four of the five financial institutions the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels was higher than 80%. For two this proportion was over 95%. This indicates the huge disparity between the financing of renewable energy and fossil fuels.

Table 99 also shows the percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels. All except one of the researched financial institutions active in Sweden decreased the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). These decreases ranged between 2 percentage points, with the largest decrease in fossil fuel for SEB with 30 percentage points.

Table 99 Overview of loans and underwriting to the selected companies attributable to fossil fuels and renewable energy, and renewable energy projects (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Nordea	Sweden	7,997	1,863	81%	-2%
SEB	Sweden	3,854	1,972	66%	-30%
Danske Bank	Denmark	2,465	83	97%	0%
Handelsbanken	Sweden	1,556	34	98%	-2%
Swedbank	Sweden	653	99	87%	-13%
Total		16,526	4,050	80%	-11%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

11.2 Shareholdings

This section provides an analysis of the investments in shareholdings by financial institutions active in Sweden in the selected companies. Section 11.2.1 provides an outline of the annual changes in the investments in selected companies. Section 11.2.2 ranks the financial institutions active in Sweden according to their investments in selected companies attributable to fossil fuels.

11.2.1 Annual analysis

Figure 229 shows that the average investments in selected companies, attributable to fossil fuels, generally followed the fluctuations in the average market capitalization of the selected companies. In the period 2011-2014 in particular investments in selected companies attributable to fossil fuels exceeded the trend lines.

Invests in selected companies attributable to renewable energy peaked in 2008 and declined thereafter. Since 2012 there has been a general upward trend in investments in selected companies attributable to renewable energy. It is important to note the disparity between investments in selected companies attributable to renewable energy and fossil fuels.

Figure 229 Annual investments by financial institutions active in Sweden in selected companies

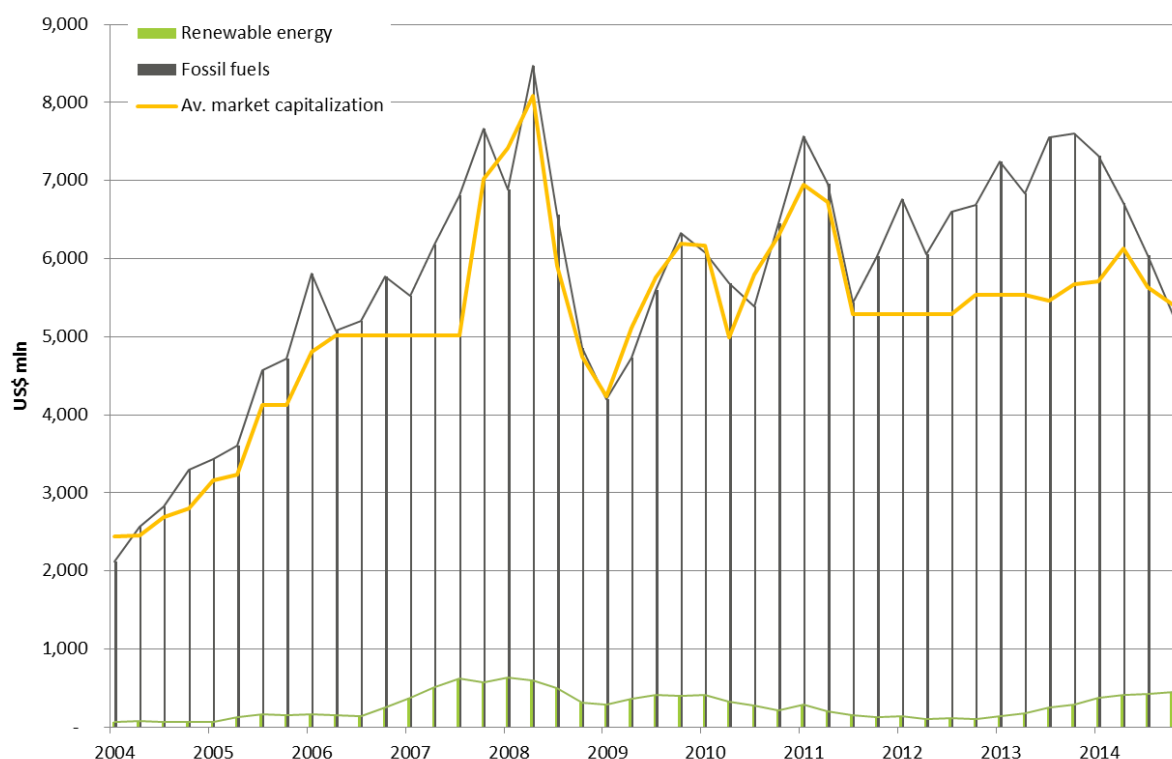


Table 100 shows the large difference between investments in selected companies attributable to renewable energy and investments in selected companies attributable to fossil fuels.

Table 100 Average annual investments in selected companies attributable to renewable energy(US\$ mln)

Year	Renewable energy	Fossil fuels
2004	65	2,698
2005	123	4,082
2006	175	5,464
2007	520	6,547
2008	512	6,694
2009	363	5,213
2010	304	5,903
2011	189	6,494
2012	111	6,521
2013	211	7,308
2014	416	6,338

Table 101 shows that on average, in the period 2004-2014, financial institutions active in Sweden invested 3% of their total investments in selected companies in renewable energy and 76% in fossil fuels. The proportion of total investments in selected companies attributable to fossil fuels has been increasing since a low in 2010. The proportion of investments attributable to renewable energy was highest in 2007-2008. We hope that the upward trend in 2014 sets a precedent.

Table 101 Average annual % investment in renewable sector

Year	Renewable	Fossil fuels
2004	1%	55%
2005	2%	81%
2006	2%	75%
2007	6%	73%
2008	6%	76%
2009	5%	76%
2010	4%	75%
2011	2%	79%
2012	1%	82%
2013	2%	82%
2014	5%	80%
Average	3%	76%

11.2.2 Rankings

This section provides a ranking of the financial institutions active in Sweden in terms of the value of their investments attributable to fossil fuels. Figure 230 provides a ranking of the top financial institutions on the basis of their average annual investments in the selected companies attributable to fossil fuels in the period 2009-2014. Nordea, Swedbank and SEB occupy the top three positions with the highest average annual investments in selected companies attributable to fossil fuels. Nordea and Swedbank invested on average more than US\$ 1.5 billion in fossil fuels annually in the period 2009-2014.

Figure 230 also shows the large gap between average annual investments in selected companies attributable to fossil fuels and renewable energy. The largest investor in fossil fuels, Nordea, only had an average annual investment in renewable energy of US\$ 80 million in the period 2009-2014.

Figure 230 Ranking of the top average annual investors in the selected companies attributable to fossil fuels (US\$ mln, 2009-2014)

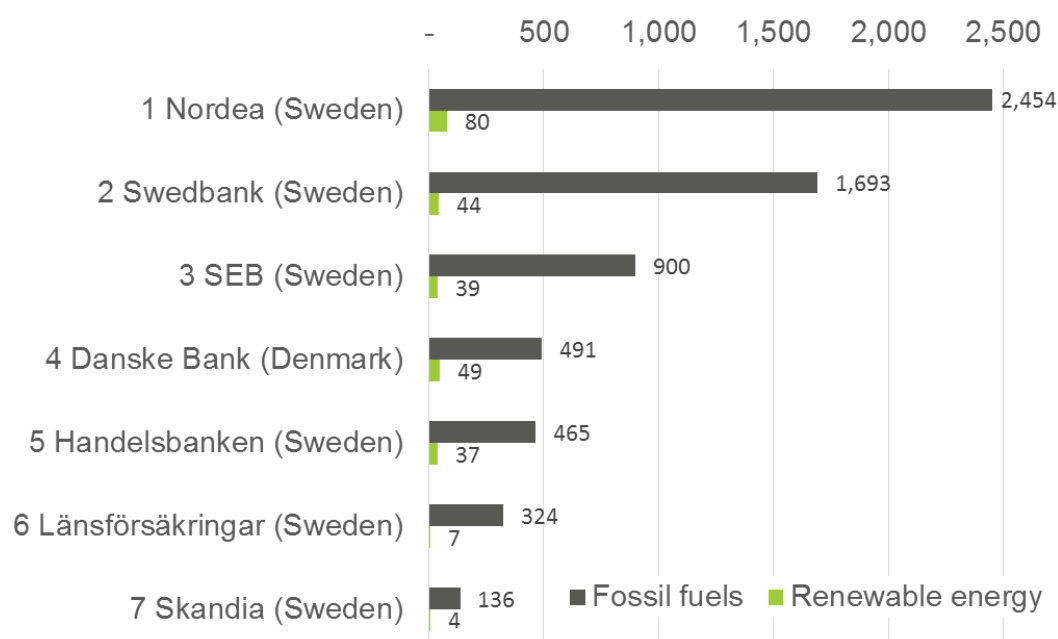


Table 102 provides an overview of the investments in the selected companies attributable to fossil fuels and renewable energy. It shows that for all of the financial institutions active in Sweden the proportion of fossil fuels in their total investments in selected companies attributable to renewable energy and fossil fuels was higher than 90%. For five of the seven this proportion was over 95%. This indicates the huge disparity between the financing of renewable energy and fossil fuels.

Table 102 also shows the change in the proportion of fossil fuels in the total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in the investments in the selected companies attributable to renewable energy and fossil fuels. Only one financial institution marginally decreased the proportion of fossil fuels in its investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). However, this decrease was very small, 1 percentage point. The remaining financial institutions actually increased the proportion of fossil fuels in their total investments in selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). Danske Bank had the highest proportion increase.

Table 102 Overview of shareholdings in the selected companies attributable to fossil fuels and renewable energy (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Nordea	Sweden	2,454	80	97%	2%
Swedbank	Sweden	1,693	44	97%	1%

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
SEB	Sweden	900	39	96%	-1%
Danske Bank	Denmark	491	49	91%	6%
Handelsbanken	Sweden	465	37	93%	1%
Länsförsäkringar	Sweden	324	7	98%	1%
Skandia	Sweden	136	4	97%	3%
Total		260	6,463	260	6,463

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

11.3 Financial institution analysis

This section provides an analysis of the changes in values of loans, underwriting services and investments in shares in selected companies that can be attributed to renewable energy and fossil fuels individually for the financial institutions active in Sweden. The sub-sections are ordered alphabetically by bank name.

11.3.1 Danske Bank

This section provides an analysis of the financing provided by Danske Bank to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In 2008, Danske Bank stated that “the Group considers climate change our key environmental issue and has therefore developed a climate change strategy for the years ahead. The strategy focuses on our ability to confront the climate challenge in our financial business and operations and through dialogue with stakeholders.” [...] “We believe that the financial services sector plays a vital role in providing the financial infrastructure to support a low-carbon economy.”¹⁷⁵

Also in 2010 and 2015, Danske Bank subscribed to the Global Investor Statement on Climate Change. Since 2015, Danske Bank is also a member of the Institutional Investors Group on Climate Change (IIGCC).¹⁷⁶

Table 103 shows that Danske Bank increased its total loans and underwriting to the selected companies attributable to renewable energy by 103% in the second half of the period of study. Loans and underwriting to the selected companies attributable to fossil fuels increased by 63%. As a proportion of total loans and underwriting, the proportion attributable to renewable energy did not change. The proportion of total loans and underwriting attributable to fossil fuels decreased by 1%.

¹⁷⁵ Danske Bank (2009, February), *Corporate Responsibility 2008*.

¹⁷⁶ Institutional Investors Group on Climate Change (2014, September), *Global Investor Statement on Climate Change*.

Table 103 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

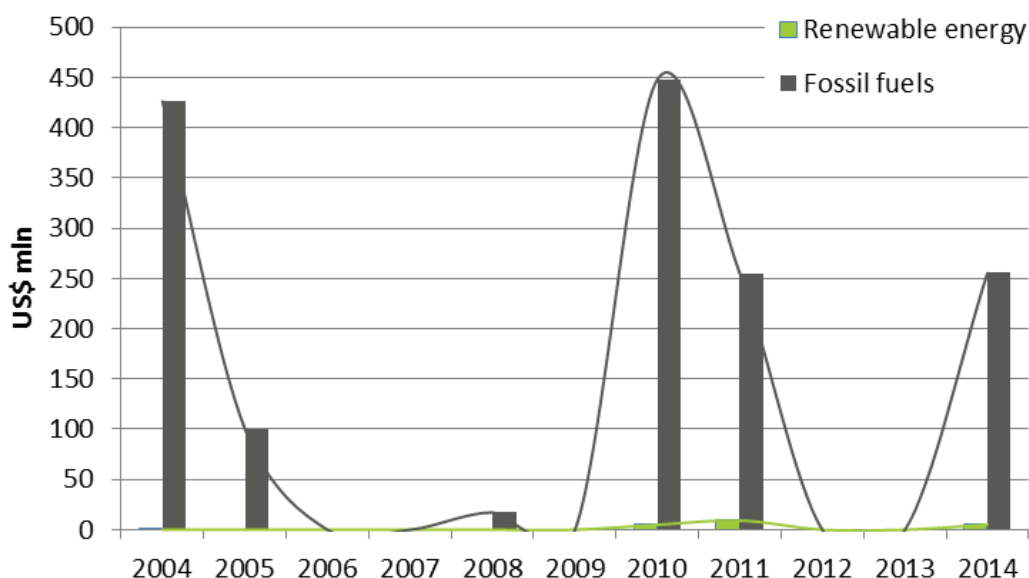
Energy source	Percent change	Proportion change
Renewable energy	103%	0%
Fossil fuels	63%	-1%

- **Loans**

Danske Bank's loans to the selected companies attributable to renewable energy decreased by 83,349%, from US\$ 0.02 million in the first half of the period of study to US\$ 19 million in the second half of the period of study. In the same period, loans to the selected companies attributable to fossil fuels increased by 76%.

Figure 231 shows that there were significant fluctuations in the Loans to the selected companies attributable to fossil fuels. When these were provided to the selected companies, they generally exceeded US\$ 250 million. Loans to the selected companies attributable to renewable energy reached a peak in 2011 at just under US\$ 10 million.

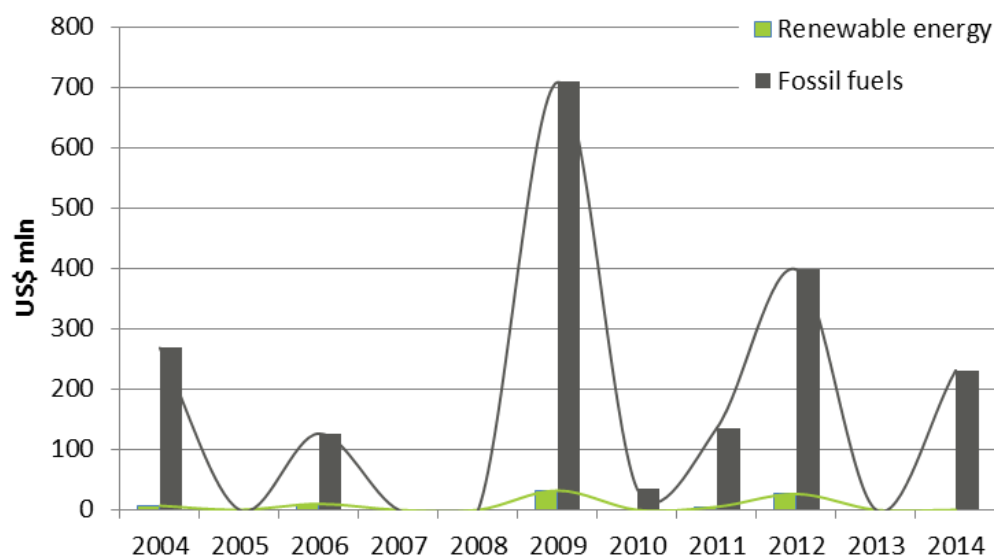
Figure 231 Danske Bank loans to the selected companies (2004-2014)



- **Underwriting**

Underwriting to renewable energy increased by 45%. Underwriting to fossil fuels increased by 54%. Figure 232 shows that there are again significant fluctuations in the underwriting to fossil fuels. However, underwriting to fossil fuels has consistently been higher than underwriting to renewable energy. Underwriting to renewable energy never exceed US\$ 33 million.

Figure 232 Danske Bank underwriting services to the selected companies (2004-2014)

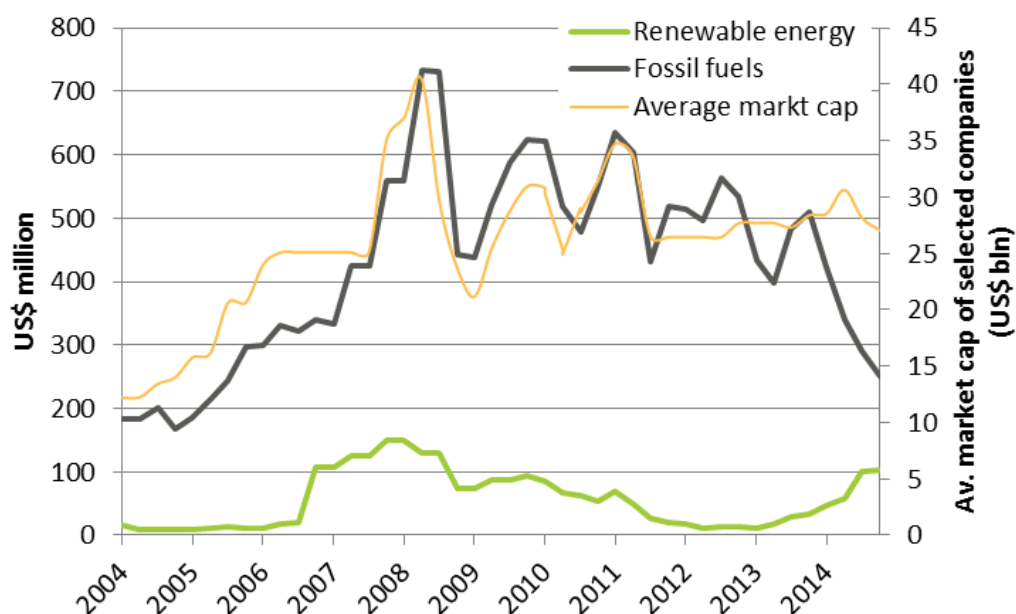


- **Shareholdings**

In the second half of the period of study, the average annual investments in selected companies attributable to renewable energy decreased by 27%. In the same period, average annual investments in selected companies attributable to fossil fuels increased by 26%. Figure 233 shows that Danske's shareholdings attributable to fossil fuels followed the fluctuations in the average market capitalization. For most of the period of study, Danske's average investments in selected companies attributable to fossil fuels were never below US\$ 400 million. Since the second quarter of 2013, there has been a decline in investments in selected companies attributable to fossil fuels.

Investments in selected companies attributable to renewable energy have also fluctuated. After a dip in 2012, Danske Bank's investments in selected companies attributable to renewable energy show an upward trend, exceeding US\$ 100 million.

Figure 233 Danske Bank shareholdings in selected companies 2004-2014



11.3.2 Handelsbanken

This section provides an analysis of the financing provided by Handelsbanken to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In its 2005 annual report, Handelsbanken stated, ““As far as technically and financially possible, and to the extent that it is compatible with the Bank’s undertakings, Handelsbanken aims to promote long-term sustainable development. The Bank also aims to take measures to minimise any negative impact on the environment.”¹⁷⁷

Handelsbanken’s 2015 policy for responsible investment mentions the Kyoto Protocol as an element when screening investments.¹⁷⁸

Handelsbanken is also a member of the Carbon Disclosure Project.

Table 104 shows that Handelsbanken increased its loans and underwriting, in the second half of the study, by 2,264%. In terms of value, this increase was from US\$ 1 million to US\$ 34 million. Financing of fossil fuels, in the same period, decreased by 14%, from US\$ 1.8 billion to US\$ 1.5 billion. The proportion of total financing attributable to renewable energy increased by 1%, while the proportion attributable to fossil fuels increased by 14%.

Table 104 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	2,264%	1%

177 Svenska Handelsbanken (2006, March), *Annual Report 2005*.

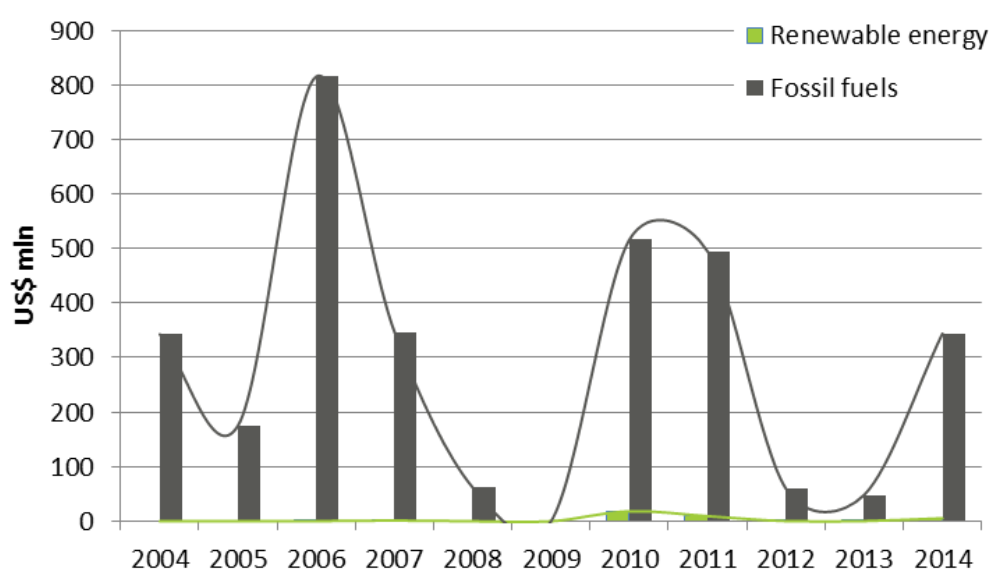
178 Svenska Handelsbanken (2015, August), *Policy for Responsible Investment*.

Energy source	Percent change	Proportion change
Fossil fuels	-14%	14%

- **Loans**

Handelsbanken provided 2,264% more loans to the selected companies attributable to renewable energy in the second half of the period of study. During this period, loans to the selected companies attributable to fossil fuels decreased by 62%. Figure 234 shows that there were fluctuations in Handelsbanken's Loans to the selected companies attributable to fossil fuels. These do, however, seem to be declining in recent years. Loans to the selected companies attributable to renewable energy peaked at US\$ 18.35 in 2010. They have, since then declined.

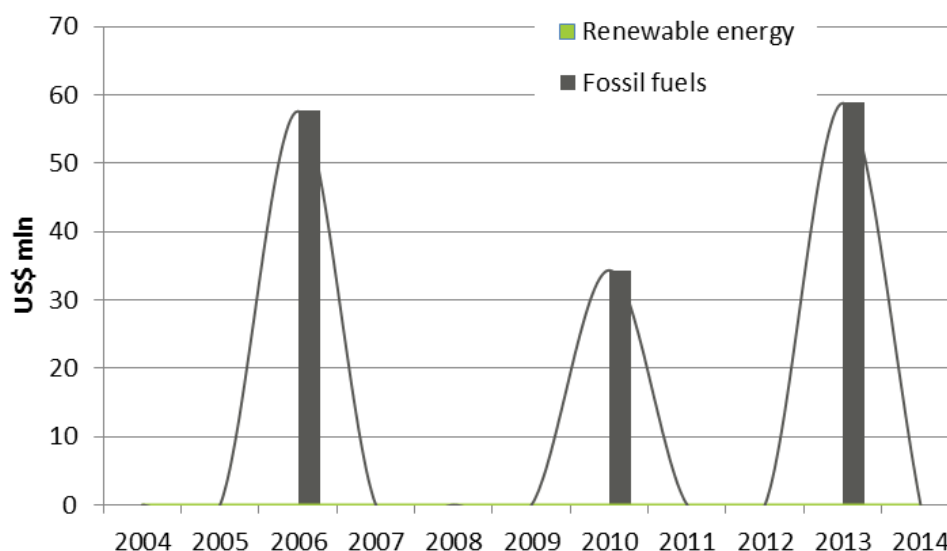
Figure 234 Handelsbanken loans to the selected companies (2004-2014)



- **Underwriting**

Handelsbanken did not provide any underwriting to the selected companies attributable to renewable energy, or renewable energy projects. Underwriting to fossil fuels has increased by 62%, in the second half of the period of study. Figure 235 shows that underwriting has fluctuated between US\$ 30 million and US\$ 59 million.

Figure 235 Handelsbanken underwriting services to the selected companies (2004-2014)



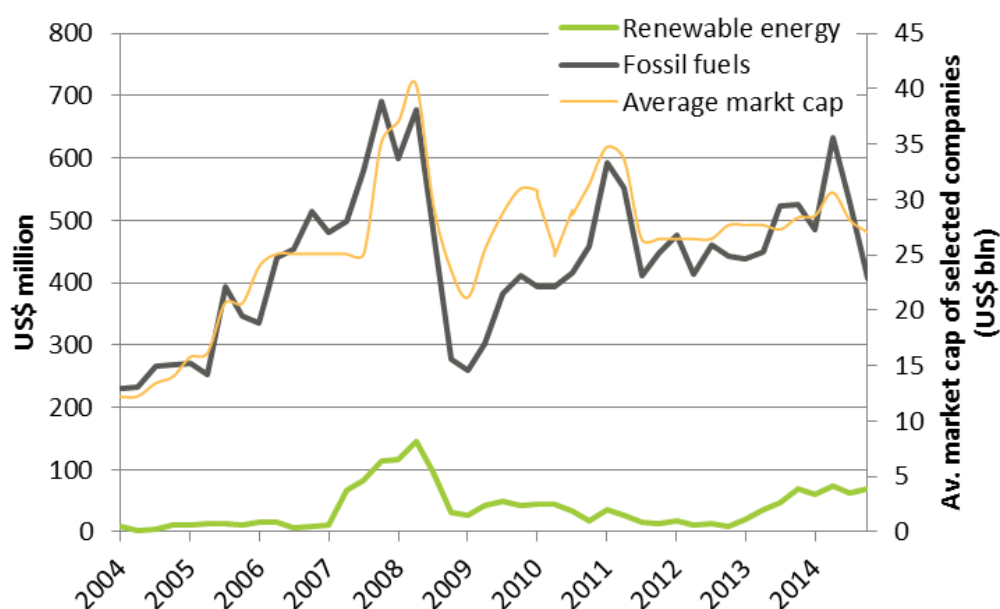
- **Shareholdings**

It should be noted here that during the verification process, Handelsbanken reported an issue with the data that had been collected from financial databases. For a small number of companies, and a number of quarterly reporting dates (particularly in 2009-2010), Handelsbanken stated that the reported positions were many times higher than their actual holdings. They stated their holdings were unlikely to deviate that much from one quarter to the next. This issue was reported to the financial database administrators. However, their response was delayed by a number of weeks.

Given that Handelsbanken did not provide the specific holdings, and there was a delay in response from the financial database administrators, the researchers decided that the best approach would be to go through the positions for each company chronologically and remove entries where the position more than doubled. Figure 236 shows that the investments in selected companies attributable to fossil fuels fluctuate with the average market capitalization of the selected companies. This indicates that the adjustments are likely to have effectively addressed part of the issue. Nevertheless, readers must bear in mind the issue raised by Handelsbanken and how they were addressed when reading the analysis below.

In the second half of the period of study, Handelsbanken decreased its average investments in selected companies attributable to renewable energy by 8%. In the same period, investments in selected companies attributable to fossil fuels increased by 15%. The proportion of total investments, in selected companies, attributable to renewable energy decreased by 1%. The proportion attributable to fossil fuels increased by 3%. As noted above, Figure 236 shows that Handelsbanken's investments in selected companies attributable to fossil fuels have fluctuated with the trends in the average market capitalization of the selected companies. Since 2010, investments in selected companies attributable to fossil fuels have generally been over US\$ 400 million. In 2008, investments in selected companies attributable to renewable energy exceeded US\$ 100 million. They declined rapidly thereafter. Since 2013 they have risen from US\$ 19 million to US\$ 68 million.

Figure 236 Handelsbanken shareholdings in selected companies 2004-2014



11.3.3 Länsförsäkringar

This section provides a description of the financing provided by Länsförsäkringar to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In its Code of Conduct of 2014, Länsförsäkringar says regarding the environment, “LFAB is to contribute to the sustainable development of society and be perceived as a credible alternative in terms of environmental practices in the banking and insurance sector.”¹⁷⁹

In 2014, Länsförsäkringar refers to the Climate Change Convention and the Kyoto Protocol in the screening of investments.¹⁸⁰

Länsförsäkringar is also member of the Carbon Disclosure Project.

- **Loans and underwriting**

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

- **Shareholdings**

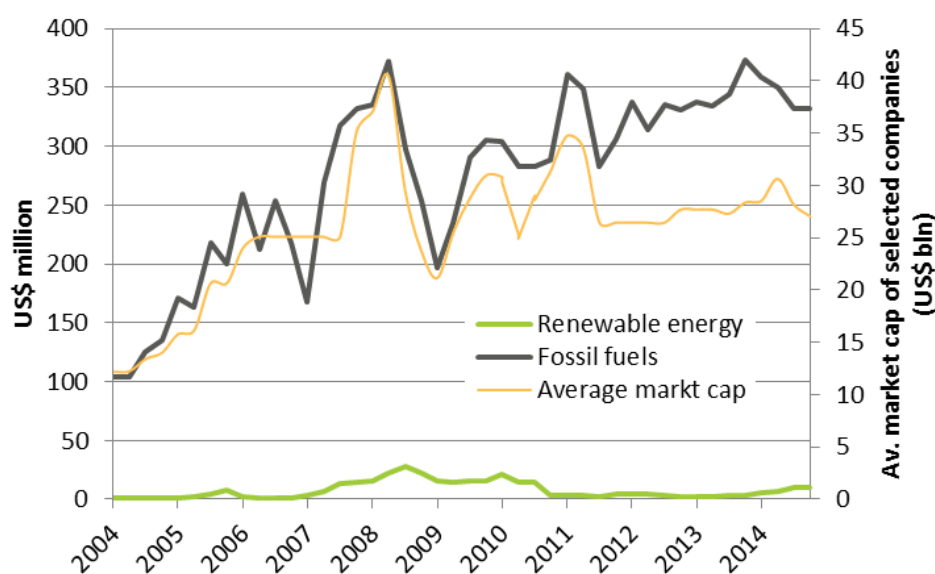
Many of Länsförsäkringar’s funds are managed by third parties. As such, the research into Länsförsäkringar’s shareholdings also was done from the fund level in addition to the company level research.

179 Länsförsäkringar Bank (2014, November), *Code of Conduct*.

180 Länsförsäkringar Bank (2014, December), *List of Covenants*.

In the second half of the period of study, Länsförsäkringar's shareholdings in selected companies, attributable to renewable energy, decreased by 17%. In the same period, investments in selected companies attributable to fossil fuels increased by 39%. Figure 237 shows that investments in selected companies attributable to fossil fuels have generally fluctuated with the average market capitalization of the selected companies. Since 2011, the upward trend of investments in selected companies attributable to fossil fuels has been more rapid than the development of average market capitalization. Investments in selected companies attributable to fossil fuels have exceeded US\$ 300 million since the fourth quarter of 2011. Investments in selected companies attributable to renewable energy, on the other hand, have fluctuated between US\$ 3 million and US\$ 10 million in the same period.

Figure 237 Länsförsäkringar shareholdings in selected companies 2004-2014



11.3.4 Nordea

This section provides a description of the financing provided by Nordea to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In 2002, Nordea adopted the Corporate Citizenships Principles: "We work to reduce negative and increase positive environmental impact from our business activities."¹⁸¹

In 2010, Nordea Head of Environmental, Social and Governance Analysis, Sasja Beslik, said of ESG Analysis, "We will use the CDP's data to help drive investments towards a low carbon economy by inspiring our investee companies to measure and report their emissions and not least to improve our own products from a climate awareness perspective."¹⁸²

¹⁸¹ Nordea (2009, March), *CSR Report 2008*.

¹⁸² Nordea (2010, May 26), "Nordea partners with Carbon Disclosure Project", online: <http://www.nordea.com/en/press-and-news/news-and-press-releases/press-releases/2010/2010-05-26-nordea-partners-with-carbon-disclosure-project.html>, viewed in September 2015.

Also in 2010, Nordea subscribed to the Global Investor Statement on Climate Change. Since 2015, Nordea is also a member of the Institutional Investors Group on Climate Change (IIGCC).¹⁸³

In 2013, Nordea became a signatory to Carbon Disclosure Project (CDP) Carbon Action. “Carbon Action is an investor-led initiative to accelerate company action on carbon reduction and energy efficiency activities which deliver a satisfactory return on investment. 190 investors with US\$ 18 trillion in assets under management ask the world’s highest emitting companies to make emissions reductions (year-on-year); with targets publicly disclosed.”¹⁸⁴

Table 105 shows that Nordea increased its loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects by 107% in the second half of the period of study. In the same period, its loans and underwriting to the selected companies attributable to fossil fuels also increased by 75%. The proportion of total loans and underwriting attributable to renewable energy increased by 6%, while the proportion attributable to fossil fuels increased by 16%.

Table 105 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	107%	6%
Fossil fuels	75%	16%

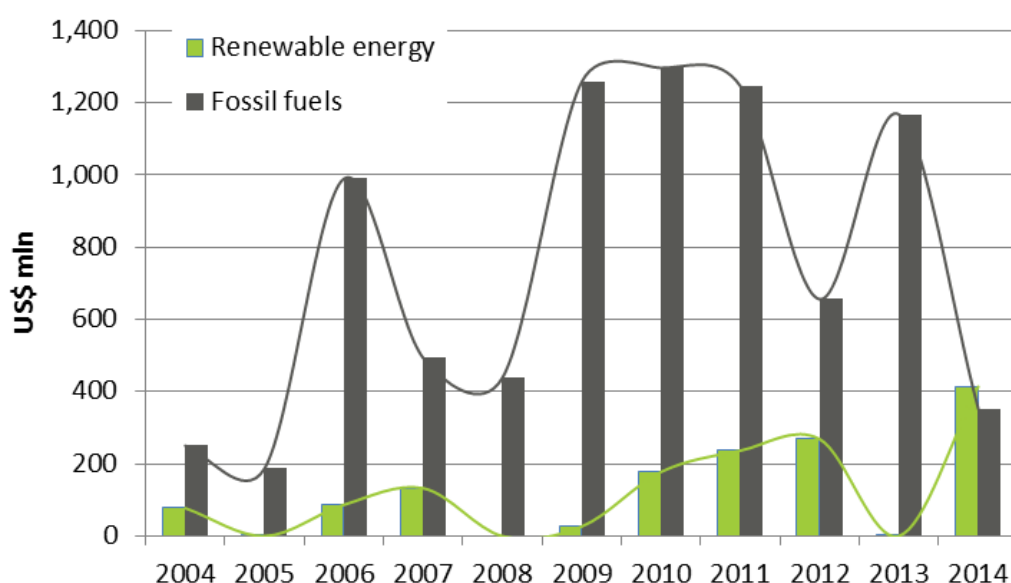
- **Loans**

Loans to the selected companies attributable to renewable energy increased by 258% in the second half of the period of study. Loans to the selected companies attributable to fossil fuels, on the other hand increased by 79%. Figure 125 shows that throughout the period of study there is a large difference in the total value of loans to the selected companies attributable to renewable energy and to fossil fuels. Through much of the period of study, loans to the selected companies attributable to fossil fuels exceeded US\$ 400 million, even US\$ 1 billion. Loans to the selected companies attributable to renewable energy, on the other hand, only once exceed US\$ 400 million in the period of study.

183 Institutional Investors Group on Climate Change (2014, September), *Global Investor Statement on Climate Change*.

184 Carbon Disclosure Project (2014, January), *2013 Activity Report*.

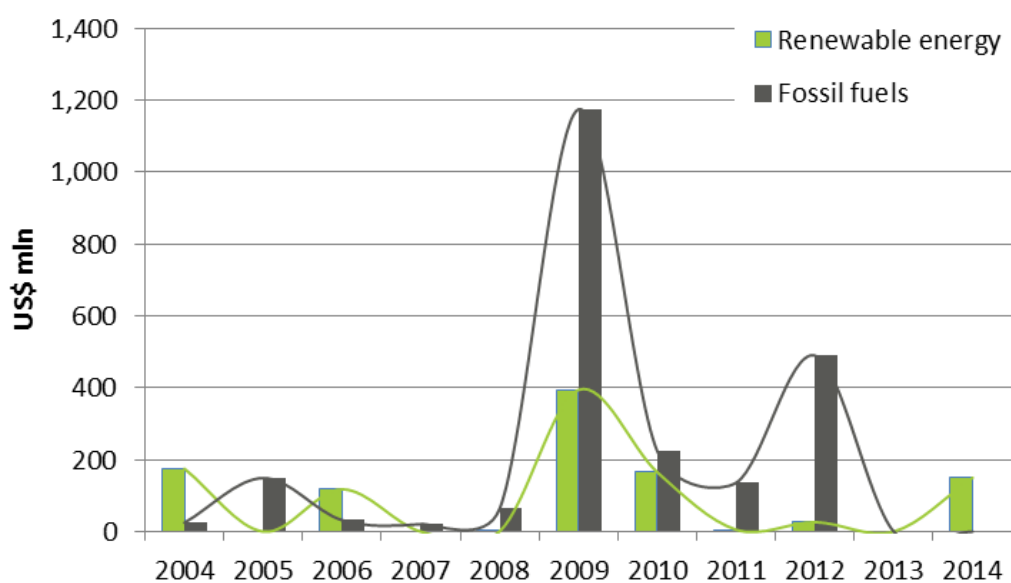
Figure 238 Nordea loans to the selected companies (2004-2014)



- **Underwriting**

Underwriting services to renewable energy, increased by 11% in the second half of the period of study. However, underwriting services to the selected companies attributable to fossil fuels, increased by 64%. Figure 126 shows that these changes are mostly attributable to the value of underwriting for fossil fuels from 2009 onwards.

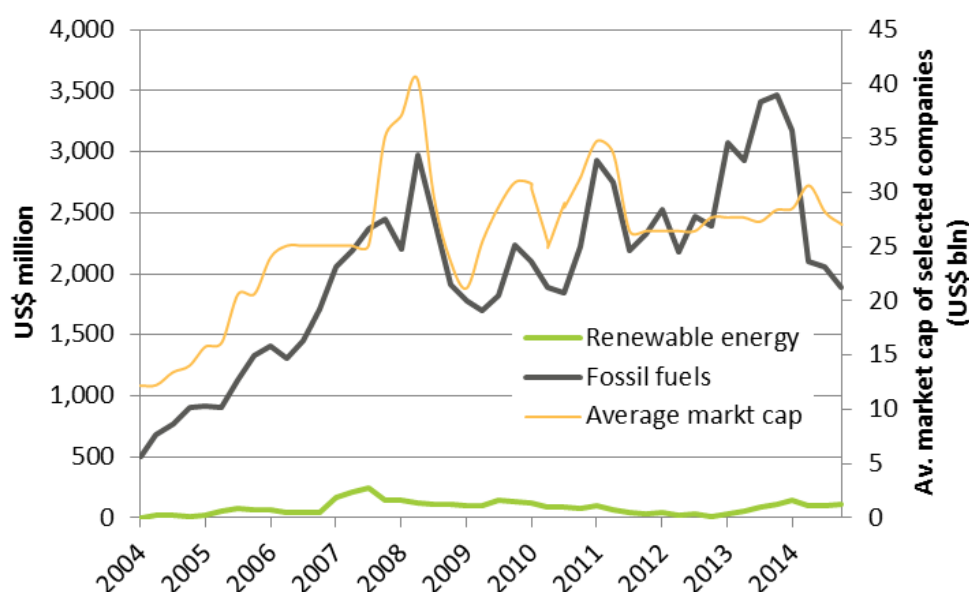
Figure 239 Nordea underwriting services to the selected companies (2004-2014)



- **Shareholdings**

Noting that Nordea subscribed to the Global Investor Statement on Climate Change in 2010, and has been member of the Institutional Investors Group on Climate Change (IIGCC) since 20015, the high levels of investments in selected companies attributable to fossil fuels are concerning.¹⁸⁵ Of further concern is that the average annual investments in selected companies attributable to renewable energy decreased by 15% in the second half of the period of study. In the same period, average annual investments in selected companies attributable to fossil fuels increased by 48%. Figure 127 shows that investments in selected companies attributable to fossil fuels have generally followed the fluctuations in the average market capitalization of the selected companies. Investments in selected companies attributable to renewable energy have not followed the same trends. The average annual investment in fossil fuels has been over US\$ 1.5 billion since the second quarter of 2006. The average annual investments in selected companies attributable to renewable energy have fluctuated between US\$ 25 million and US\$ 120 million.

Figure 240 Nordea shareholdings in selected companies 2004-2014



11.3.5 SEB

This section provides an analysis of the financing provided by SEB (SEB) to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In 2008, SEB stated that its "[c]ommitment to the environment" include the following "Priorities: [...] Reducing SEB's carbon footprint."¹⁸⁶

SEB was one of the banks behind the Global Investor Statement on Climate Change in both 2010 and 2015. It has been a member of UNEP FI since 2007, and has been a member of the Carbon Disclosure Project since 2008.

185 Institutional Investors Group on Climate Change (2014, September), *Global Investor Statement on Climate Change*.

186 SEB (2009, March), *Annual Report 2008*.

In February 2011, it SEB added: “[w]e recognise that by promoting climate change management best practice among clients and portfolio companies, we can positively impact the situation of many [...] SEB continuously strives for sustainability by minimising the carbon footprint from our financial services in dialogue with our clients and portfolio companies. The sustainability efforts are manifested by various guiding principles within SEB where we:

- acknowledge the role as financial intermediary and its potential impact on climate change and climate change mitigation;
- contribute to financing environmentally friendly projects, and develop financial products and services that contribute to sustainable actions;
- strive to identify and mitigate the exposure to risk related to climate change; and
- influence our clients and portfolio companies to have appropriate environmental management systems and climate change policies of sufficient quality.”¹⁸⁷

More recently, in 2015, SEB stated that “[s]ustainable economic development is a key concern at SEB. We see our role not only as a facilitator for sound economic growth and a guardian of a secure payment system, but also as a company with real opportunities to drive change. This means offering sustainable finance and investment solutions that can help mitigate climate change and tackle other environmental and social challenges. It means participating in creation more sustainable cities, in the construction of new infrastructure and in the nurturing of new technology and innovations.”¹⁸⁸

SEB became a signatory to the Montreal Pledge in 2015, and member of the Institutional Investors Group on Climate change in the same year.

Table 106 shows that SEB increased its total lending and underwriting to renewables, in the second half of the period of study, by 1,289%. In the same period, financing of fossil fuels increased by only 6%. The proportion of total financing attributable to renewable energy increased by 25%. The proportion attributable to fossil fuels decreased by 5%.

Table 106 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	1,289%	25%
Fossil fuels	6%	-5%

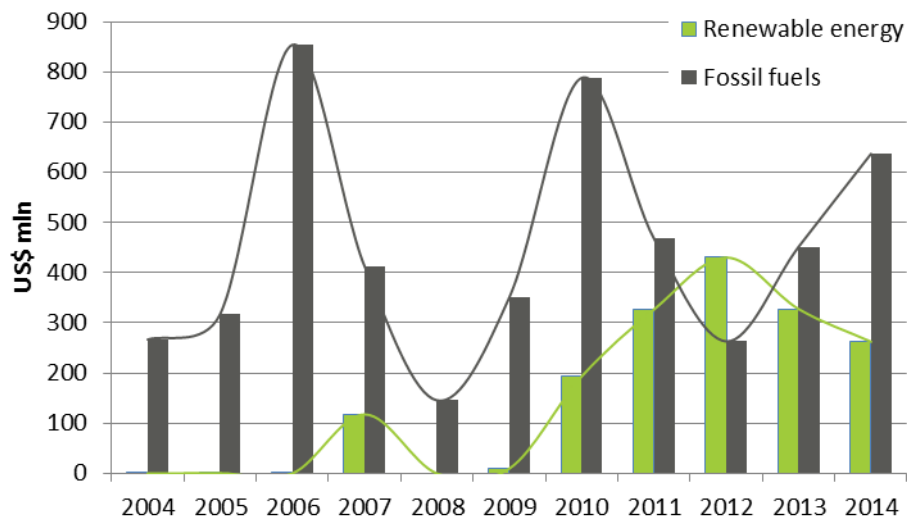
• Loans

Loans to the selected companies attributable to renewable energy, in the second half of the period of study, increased by 1,149%, from US\$ 124 million to US\$ 1.5 billion. Loans to the selected companies attributable to fossil fuels increased by 28%, from US\$ 2.2 million to US\$ 2.8 million. Figure 241 provides a more detailed overview. Since 2008, there has been a rapid increase in loans to the selected companies attributable to renewable energy, though declining again in 2013-2014. Loans to the selected companies attributable to fossil fuels have fluctuated throughout the period, though show a slight downward trend overall.

187 SEB (2011, February), *Climate Change Position Statement*.

188 SEB (2011, March), *Corporate Sustainability Report* 10.

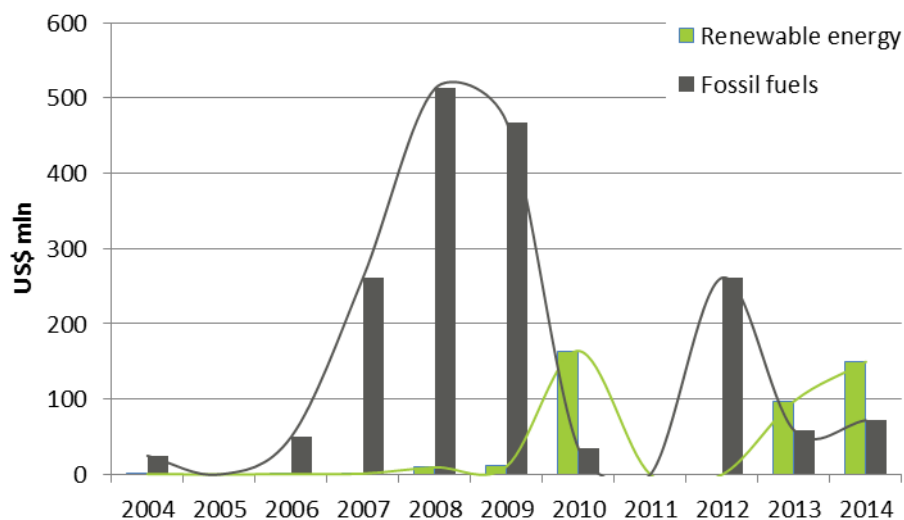
Figure 241 SEB loans to the selected companies (2004-2014)



- Underwriting**

Underwriting for renewable energy, in the second half of the period of study, increased by 2,283%. The value increase was from US\$ 17 million to US\$ 416 million. Underwriting to fossil fuels decreased by 39% in the second half of the period of study, from US\$ 1 billion to US\$ 660 million. Figure 242 shows the changes in SEB's underwriting to the selected companies in more detail.

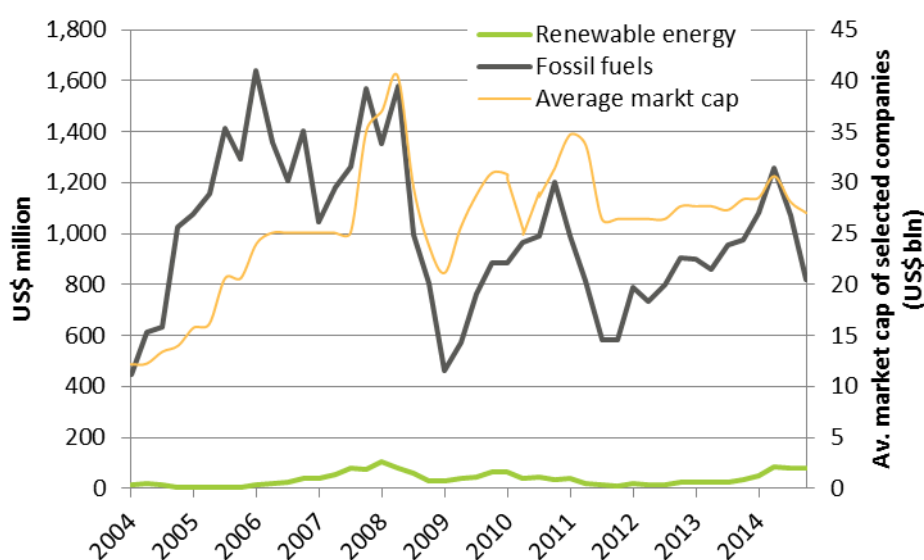
Figure 242 SEB underwriting services to the selected companies (2004-2014)



- **Shareholdings**

SEB's average investments in selected companies attributable to renewable energy, increased by 6%, in the second half of the period of study. In the same period, average investment in fossil fuels decreased by 14%. The proportion of investments attributable to renewable energy increased by 1%, while the proportion attributable to fossil fuels increased by 8%. Figure 243 shows that SEB's investments in selected companies attributable to fossil fuels generally followed the fluctuations in average market capitalization of the selected companies. Investments in selected companies attributable to fossil fuels have fluctuated between approximately US\$ 600 million and US\$ 1.2 billion since 2011. Investments in selected companies attributable to renewable energy have fluctuated between US\$ 13 million and US\$ 80 million.

Figure 243 SEB shareholdings in selected companies 2004-2014



11.3.6 Skandia

This section provides a description of the financing provided by Skandia Bank to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In its 2013 sustainability policy, Skandia stated that it wants to contribute to sustainable development and reduce their negative environmental impact. They are aware that they have a direct environmental impact through their business and an indirect impact arising in connection with the procurement of products and services as well as investment decisions. Skandia says that it shall: implement processes to consider and reducing negative environmental impacts in all parts of the business; set targets and take action to reduce the negative environmental impact that arises from both direct and indirect operations, and; reduce the company's direct and indirect climate impact.¹⁸⁹

- **Loans and underwriting**

¹⁸⁹ Skandia (2013, December), *CSR Policy*.

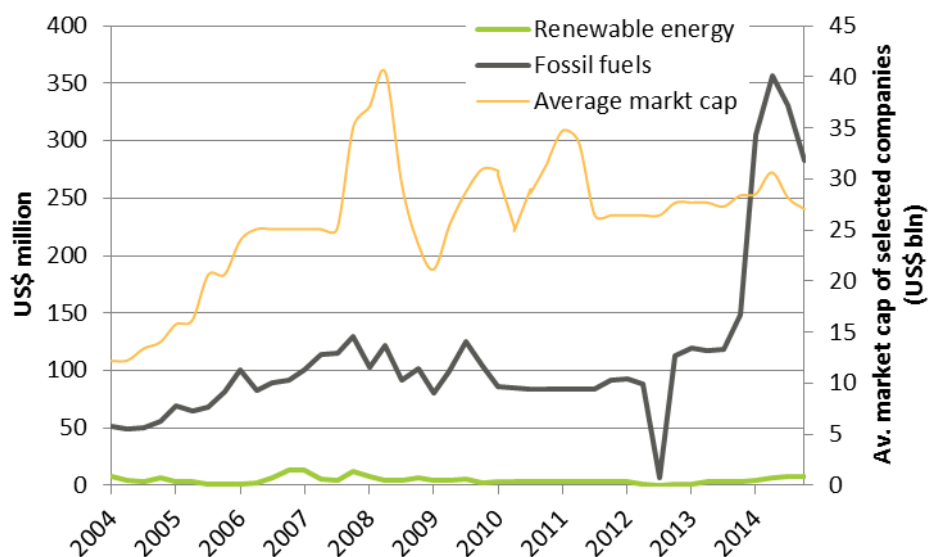
This research did not identify any loans or underwriting services provided by Skandia to the selected companies.

• Shareholdings

Many of Skandia's funds are managed by third parties. As such, the research into Skandia's shareholdings was done from the fund level in addition to the company level research.

Skandia's average investments in selected companies attributable to renewable energy, in the second half of the period of study, decreased by 31%. Investments in selected companies attributable to fossil fuels, on the other hand, increased by 45%. Figure 244 shows that, until 2010, Skandia's investments in selected companies attributable to fossil fuels followed the trends of average market capitalization. After a dip in 2012, possibly caused by a gap in the data as this was gathered from the fund rather than company level, investments in selected companies attributable to fossil fuels increased rapidly. Investments in selected companies attributable to renewable energy, on the other hand, fluctuated between US\$ 1.4 million and US\$ 4 million.

Figure 244 Skandia shareholdings in selected companies 2004-2014



11.3.7 Swedbank

This section provides a description of the financing provided by Swedbank to the selected companies that can be attributed to renewable energy and fossil fuels and the changes in its financing trends.

In 2007, Swedbank stated, “[i]n order to favour conditions for a sustainable development, we believe that the use of fossil fuels has to be reduced. We want to invest in companies that prioritise development towards renewable energy, while reducing their production of fossil fuels.”¹⁹⁰

The bank added that, “[w]e consider it as being particularly value-creating if companies:

- Prioritise a sustainable production of renewable energy and reduce their production of fossil fuels.

190 Swedbank (2011, November), *Swedbank Robur's Position on Production of Fossil Oil and Gas*.

- Have an explicit strategy and action plan to reduce dependence on fossil energy.
- Promote greater knowledge and research of renewable energy, and collaborate within international initiatives related to this issue.”¹⁹¹

Also in 2010 and 2015, Swedbank subscribed to the Global Investor Statement on Climate Change.

Table 107 shows that, in the second half of the period of study, Swedbank’s loans and underwriting to the selected companies attributable to renewable energy and renewable energy projects increased by 34,940%. The proportion of Swedbank’s total loans to the selected companies attributable to renewable energy increased by 8%. Financing of fossil fuels, in the same period, increased by 363%. As a proportion of total financing to the selected companies, financing to fossil fuels increased by 31%.

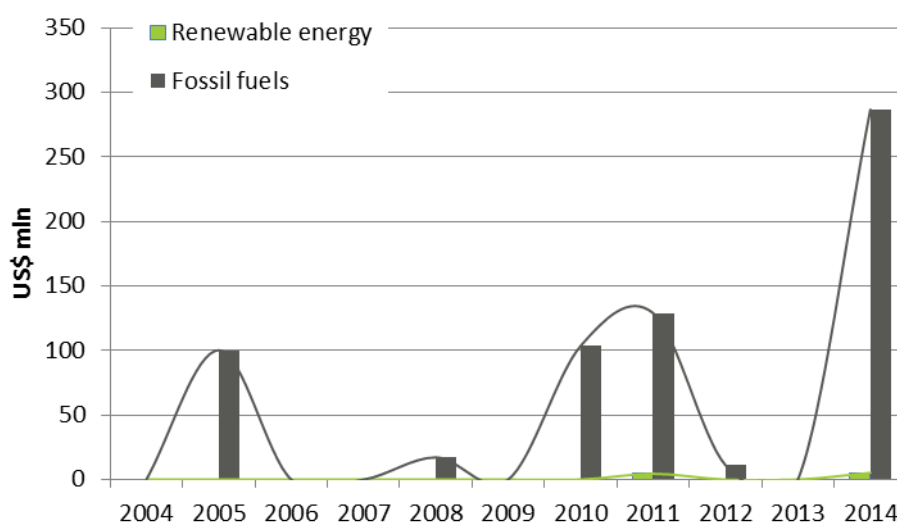
Table 107 Change in loans and underwriting to the selected companies attributable to renewable energy and fossil fuels, and renewable energy projects (2004-2014)

Energy source	Percent change	Proportion change
Renewable energy	34,940%	8%
Fossil fuels	363%	31%

• Loans

Figure 245 shows that Swedbank did not provide any loans to the selected companies attributable to renewable energy, in the first half of the period of study. However, in the second half of the period of study, loans to the selected companies attributable to fossil fuels amounted to US\$ 9 million. Loans to the selected companies attributable to fossil fuels, however, increased by 352%. The increase was from US\$ 117 million to US\$ 530 million.

Figure 245 Swedbank loans to the selected companies (2004-2014)

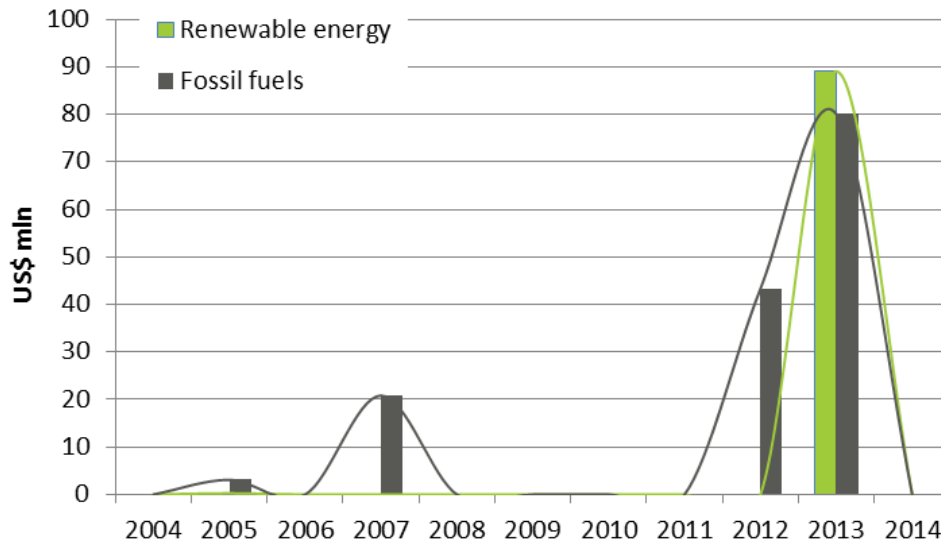


• Underwriting

191 Swedbank (2011, November), *Swedbank Robur's Position on Production of Fossil Oil and Gas*.

Swedbank provided 31,507% more underwriting to fossil fuels in the second half of the period of study. This was an increase from US\$ 0.3 million to US\$ 89 million. Underwriting for fossil fuels increased by 416%, from US\$ 24 million to US\$ 123 million. Figure 246 shows that these underwriting occurred mainly in 2012 and 2013.

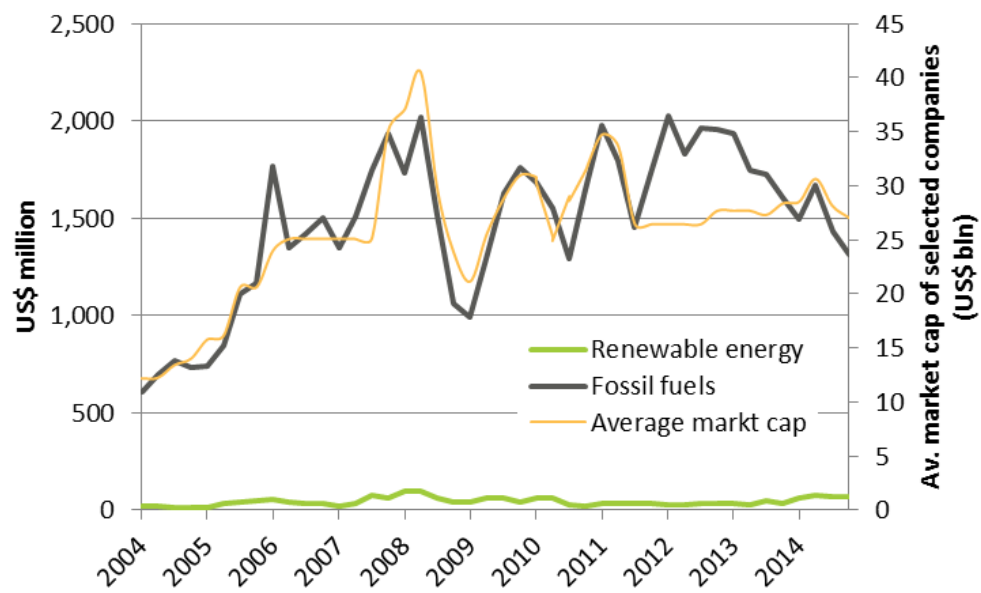
Figure 246 Swedbank underwriting services to the selected companies (2004-2014)



• Shareholdings

Swedbank's average investments in selected companies attributable to renewable energy, decreased by 4% in the second half of the period of study. In the same period, shareholdings in fossil fuels increased by 28%. As a proportion of total investments in selected companies, renewable energy decreased by 1% in the second half of the period of study. The proportion attributable to fossil fuels also decreased by 1%. As Figure 247 shows, since 2010, investments in selected companies attributable to renewable energy have fluctuated between US\$ 20 million and US\$ 80 million. In the same period investments in selected companies attributable to fossil fuels have fluctuated between US\$ 1.3 billion and US\$ 2 billion.

Figure 247 Swedbank shareholdings in selected companies 2004-2014



Appendix 1 Ranking of all research financial institutions

Table 108 Overview of loans and underwriting to the selected companies attributable to fossil fuels and renewable energy, and renewable energy projects (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
Citigroup	United States	76,457	6,576	92%	-3%
JPMorgan Chase	United States	76,394	4,394	95%	-2%
Bank of America	United States	62,677	5,428	92%	-5%
Barclays	United Kingdom	61,732	5,811	91%	-6%
BNP Paribas	France	56,687	6,232	90%	1%
Royal Bank of Scotland	United Kingdom	53,080	5,640	90%	1%
Deutsche Bank	Germany	53,011	5,095	91%	4%
Mitsubishi UFJ Financial	Japan	50,045	7,489	87%	-9%
Mizuho Financial	Japan	40,223	4,912	89%	-6%
HSBC	United Kingdom	39,340	4,875	89%	-6%
UBS	Switzerland	38,736	2,237	95%	-2%
Credit Suisse	Switzerland	38,417	4,844	89%	-6%
Société Générale	France	36,943	5,586	87%	-7%
Crédit Agricole	France	35,179	4,918	88%	2%
Sumitomo Mitsui Financial	Japan	30,141	4,292	88%	-7%
ICBC	China	27,832	394	99%	1%
Bank of China	China	25,539	730	97%	-2%
ING Group	Netherlands	22,359	2,605	90%	4%
UniCredit	Italy	21,181	3,701	85%	3%
Wells Fargo	United States	20,589	817	96%	-1%
Royal Bank of Canada	Canada	17,111	1,836	90%	-8%
China Construction Bank	China	16,876	456	97%	1%
Intesa Sanpaolo	Italy	14,634	2,468	86%	14%
Santander	Spain	14,113	7,921	64%	3%
Bank of Communications	China	12,315	433	97%	-3%
BPCE Group	France	11,881	2,605	82%	13%
Agricultural Bank of China	China	10,801	152	99%	2%
BBVA	Spain	10,722	4,557	70%	5%
Lloyds Banking Group	United Kingdom	10,047	2,664	79%	6%
Toronto-Dominion Bank	Canada	7,624	489	94%	-6%
Nordea	Sweden	6,781	1,652	80%	-2%
Sumitomo Mitsui Trust	Japan	3,758	84	98%	-1%
SEB	Sweden	3,445	1,962	64%	-32%

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
National Australia Bank	Australia	3,303	674	83%	1%
Danske Bank	Denmark	2,111	67	97%	-1%
Rabobank	Netherlands	1,645	1,753	48%	-24%
Handelsbanken	Sweden	1,556	34	98%	-2%
Crédit Mutuel CIC Group	France	1,345	242	85%	-6%
KBC Group	Belgium	1,008	477	68%	-7%
Bank Mandiri	Indonesia	799	10	99%	0%
Swedbank	Sweden	653	99	87%	-13%
ABN Amro	Netherlands	600	209	74%	n/a
Banco do Brasil	Brazil	543	462	54%	-27%
OCBC	Singapore	469	49	90%	-8%
Norinchukin Bank	Japan	423	0	100%	0%
Itaú Unibanco	Brazil	421	105	80%	-11%
Bank Rakyat Indonesia	Indonesia	324	6	98%	0%
CIMB Group	Malaysia	311	-	100%	1%
Bradesco	Brazil	275	26	91%	n/a
Bank Central Asia	Indonesia	190	3	98%	n/a
Bank Negara Indonesia	Indonesia	158	54	74%	3%
Jyske Bank	Denmark	149	1	99%	0%
Belfius Bank	Belgium	144	572	20%	11%
Aegon	Netherlands	90	29	75%	n/a
Resona Holdings	Japan	29	-	100%	1%
Caixa Econômica Federal	Brazil	17	5	79%	79%
Panin Bank	Indonesia	3	-	100%	0%
ASN Bank	Netherlands	-	327	0%	0%
NIBC Holding	Netherlands	-	9	0%	-100%
Sydbank	Denmark	-	107	0%	0%
Triodos Bank	Netherlands	-	100	0%	0%
Total		119,274	1,023,239	90%	-2%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy, renewable energy projects, and fossil fuels.

Table 109 Overview of shareholdings in the selected companies attributable to fossil fuels and renewable energy (US\$ mln, 2009-2014)

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
JPMorgan Chase	United States	17,296	388	98%	-1%
UBS	Switzerland	13,658	259	98%	0%
Bank of America	United States	11,471	68	99%	2%
Deutsche Bank	Germany	10,756	576	95%	-1%
Credit Suisse	Switzerland	6,883	147	98%	-1%
Wells Fargo	United States	6,453	28	100%	2%
BPCE Group	France	5,971	567	91%	-6%
Royal Bank of Canada	Canada	5,822	69	99%	-1%
BNP Paribas	France	5,625	261	96%	1%
Toronto-Dominion Bank	Canada	5,547	51	99%	0%
HSBC	United Kingdom	5,506	99	98%	0%
Crédit Agricole	France	5,334	256	95%	-2%
Mitsubishi UFJ Financial	Japan	4,535	1,220	79%	-3%
Sumitomo Mitsui Trust	Japan	4,063	663	86%	14%
Société Générale	France	3,794	311	92%	-5%
Mizuho Financial	Japan	3,435	166	95%	0%
Intesa Sanpaolo	Italy	2,862	61	98%	0%
Nordea	Sweden	2,454	80	97%	2%
UniCredit	Italy	2,243	146	94%	-2%
Aegon	Netherlands	1,995	19	99%	-1%
Swedbank	Sweden	1,693	44	97%	1%
Barclays	United Kingdom	1,560	32	98%	9%
Citigroup	United States	1,341	45	97%	-2%
KBC Group	Belgium	1,192	55	96%	2%
Sumitomo Mitsui Financial	Japan	1,004	48	95%	-2%
Santander	Spain	958	142	87%	2%
SEB	Sweden	900	39	96%	-1%
Danske Bank	Denmark	491	49	91%	6%
Handelsbanken	Sweden	465	37	93%	1%
Royal Bank of Scotland	United Kingdom	433	18	96%	-3%
Resona Holdings	Japan	380	1	100%	0%
BBVA	Spain	367	270	58%	-13%
Länsförsäkringar	Sweden	324	7	98%	1%
Crédit Mutuel CIC Group	France	276	22	93%	-7%
Bank of China	China	218	10	96%	-3%
Delta Lloyd	Netherlands	177	68	72%	-14%

Financial institution	Country	Fossil fuels	Renewable energy	Proportion fossil fuels*	Change in proportion fossil fuels**
F. van Lanschot Bankiers	Netherlands	171	0	100%	14%
Bank of Communications	China	158	14	92%	-3%
Skandia	Sweden	136	4	97%	3%
Sydbank	Denmark	129	4	97%	1%
SNS Bank	Netherlands	126	6	95%	-1%
ABN Amro	Netherlands	105	17	86%	n/a
National Australia Bank	Australia	83	-	100%	n/a
ICBC	China	73	5	94%	-5%
Norinchukin Bank	Japan	67	9	89%	42%
Rabobank	Netherlands	50	1	99%	-1%
OCBC	Singapore	32	0	99%	-1%
Itaú Unibanco	Brazil	31	1	97%	-2%
Bradesco	Brazil	30	1	97%	-2%
ING Group	Netherlands	30	0	100%	0%
Caixa Econômica Federal	Brazil	28	0	100%	0%
CIMB Group	Malaysia	28	0	100%	3%
Argenta	Belgium	24	1	94%	-2%
Agricultural Bank of China	China	24	2	93%	n/a
Banco do Brasil	Brazil	22	1	97%	-2%
Lloyds Banking Group	United Kingdom	18	0	100%	n/a
Nykredit Association	Denmark	13	9	61%	23%
VDK Spaarbank	Belgium	1	0	99%	-1%
ASN Bank	Netherlands	1	11	9%	3%
Triodos Bank	Netherlands	1	18	4%	n/a
China Construction Bank	China	-	1	0%	n/a
Total		138,862	6,426	96%	-1%

* The proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

** The percentage point change in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels from the first half of the period of study (2004-2009) to the second half of the period of study (2009-2014). A negative percentage indicates a decline in the proportion attributable to fossil fuels. A positive percentage indicates an increase in the proportion of fossil fuels in their total loans and underwriting to the selected companies attributable to renewable energy and fossil fuels.

Appendix 2 Researched companies and renewable energy projects

Table 110 provides the list of the selected companies and sectors. It should be noted that a number of companies in the list are active more multiple sectors of interest. On the basis of the methodology, in the financial analysis sector activity has been adjusted (see section 2.7).

Table 110 Selected companies and sectors

Company	Country	Sector
Adani Enterprises	India	Coal mining
Adaro Energy	Indonesia	Coal mining
African Rainbow Minerals	South Africa	Coal mining
Alliance Resource Partners	United States	Coal mining
Alpha Natural Resources	United States	Coal mining
Anglo American	United Kingdom	Coal mining
Arch Coal	United States	Coal mining
Bandanna Energy	Australia	Coal mining
Banpu	Thailand	Coal mining
Bayan Resources	Indonesia	Coal mining
BHP Billiton	Australia	Coal mining
Borneo Lumbung	Indonesia	Coal mining
Bumi Resources	Indonesia	Coal mining
China Guodian Corporation	China	Coal mining
China Huaneng Corporation	China	Coal mining
China National Coal Group	China	Coal mining
China Pingmei Shenma Group	China	Coal mining
China Power Investment Corporation	China	Coal mining
Cloud Peak Energy	United States	Coal mining
Coal India	India	Coal mining
Coal of Africa	South Africa	Coal mining
Consol Energy	United States	Coal mining
Czech Coal	Czech Republic	Coal mining
Datong Coal Mine Group	China	Coal mining
Drummond	United States	Coal mining
Erdenes Tavan Tolgoi	Mongolia	Coal mining
Essar Energy	India	Coal mining
Eurasian Natural Resources	United Kingdom	Coal mining
Exxaro	South Africa	Coal mining
Glencore Xstrata	Switzerland	Coal mining
Global Coal Management	India	Coal mining
GVK	Australia	Coal mining
Huainan Mining Industry Group	China	Coal mining

Company	Country	Sector
Indika Inti Holdiko	Indonesia	Coal mining
Inner Mongolia Yitai Coal	China	Coal mining
Jindal Steel & Power	India	Coal mining
Kailuan Group	China	Coal mining
Kompania Weglowa	Poland	Coal mining
Kuzbassrazrezugol (KRU)	Russia	Coal mining
Lanco Group	India	Coal mining
Mechel	Russian Federation	Coal mining
Ncondezi Coal	Mozambique	Coal mining
New World Resources	United Kingdom/Netherlands	Coal mining
Peabody Energy	United States	Coal mining
Polska Grupa Energetyczna (PGE)	Poland	Coal mining
Reliance Power	India	Coal mining
Rio Tinto	UK / Australia	Coal mining
RWE	Germany	Coal mining
Sakari Resources	Singapore	Coal mining
Samruk-Energo	Kazakhstan	Coal mining
Sasol	South Africa	Coal mining
Severní energetická	Czech Republic	Coal mining
Shaanxi Coal & Chemical Industry	China	Coal mining
Shanxi Coking Coal Group	China	Coal mining
Shanxi Jincheng Anthracite Mining Group	China	Coal mining
Shanxi Lu'An Mining Group	China	Coal mining
Shanxi Meijin Energy Group	China	Coal mining
Shenhua Group	China	Coal mining
Siberian Business Union	Russia	Coal mining
Singareni Collieries Company (SCC)	India	Coal mining
SUEK	Russia	Coal mining
TECO Energy	United States	Coal mining
Toba Bara Sejahtera	Indonesia	Coal mining
Vale	Brazil	Coal mining
Vattenfall	Sweden	Coal mining
Waratah Coal	Australia	Coal mining
Whitehaven Coal	Australia	Coal mining
Yangquan Coal Industry Group	China	Coal mining
Yankuang Group	China	Coal mining
Ze Pak	Poland	Coal mining
Abengoa	Spain	Cogen

Company	Country	Sector
Abengoa	Spain	Concentrated Solar Power
Acciona	Spain	Concentrated Solar Power
ACS Cobra	Spain	Concentrated Solar Power
AREVA	France	Concentrated Solar Power
Brightsource	United States	Concentrated Solar Power
Schott Solar	Germany	Concentrated Solar Power
Solar Reserve	United States	Concentrated Solar Power
Torresol Energy	Spain	Concentrated Solar Power
Alterra Power Corp	Canada	Geothermal
Chevron	United States	Geothermal
Enel	Italy	Geothermal
Iceland Drilling	Iceland	Geothermal
Mannvit	Iceland	Geothermal
Ormat	Israel	Geothermal
Power Engineers	United States	Geothermal
Ram Power Corp	Canada	Geothermal
Thermasource	United States	Geothermal
Turboden	Italy	Geothermal
Verkis	Iceland	Geothermal
AREVA	France	Nuclear
Anadarko Petroleum	United States	Oil & Gas
BHP Biliton	Australia	Oil & Gas
BP	United Kingdom	Oil & Gas
Canadian Natural Resources	Canada	Oil & Gas
Chesapeake Energy	United States	Oil & Gas
Chevron	United States	Oil & Gas
CNOOC	China	Oil & Gas
ConocoPhillips	United States	Oil & Gas
Devon Energy	United States	Oil & Gas
Eni	Italy	Oil & Gas
EOG Resources	United States	Oil & Gas
Exxon Mobil	United States	Oil & Gas
Gazprom	Russia	Oil & Gas
Inpex	Japan	Oil & Gas

Company	Country	Sector
Lukoil	Russia	Oil & Gas
Novatek	Russia	Oil & Gas
Occidental Petroleum	United States	Oil & Gas
Oil & Natural Gas Corp	India	Oil & Gas
PetroChina	China	Oil & Gas
PTT	Thailand	Oil & Gas
Rosneft	Russia	Oil & Gas
Royal Dutch Shell	Netherlands	Oil & Gas
Sinopec	China	Oil & Gas
Statoil	Norway	Oil & Gas
Suncor Energy	Canada	Oil & Gas
Tatneft	Russia	Oil & Gas
Total	France	Oil & Gas
Woodside Petroleum	Australia	Oil & Gas
BYD	China	PV Module Manufacturer
Canadian Solar	Canada	PV Module Manufacturer
CNPV	China	PV Module Manufacturer
ET Solar	China	PV Module Manufacturer
First Solar	United States	PV Module Manufacturer
Hanwha Q-Cells	South Korea	PV Module Manufacturer
JA Jolar	China	PV Module Manufacturer
Jinko Solar	China	PV Module Manufacturer
Kyocera	Japan	PV Module Manufacturer
Phono Solar	China	PV Module Manufacturer
REC Solar	United States	PV Module Manufacturer
ReneSola	China	PV Module Manufacturer
Risen Energy	China	PV Module Manufacturer
SHARP	Japan	PV Module Manufacturer
Solar Frontier	Japan	PV Module Manufacturer
Solarworld	Germany	PV Module Manufacturer
SunPower	United States	PV Module Manufacturer
Trina Solar	China	PV Module Manufacturer
Vikram Solar	India	PV Module Manufacturer
Yingli	China	PV Module Manufacturer
American Electric Power	United States	Utility
CEMIG (Companhia Energética de Minas Gerais)	Brazil	Utility
Central Java Power	Indonesia	Utility
Centrica	United Kingdom	Utility

Company	Country	Sector
CESP (Companhia Energética de São Paulo)	Brazil	Utility
China Datang	China	Utility
China Guodian	China	Utility
China Huadian	China	Utility
China Huaneng	China	Utility
China Power Investment	China	Utility
Chubu Electric Power	Japan	Utility
Company	Country of Origin	Utility
Datang International Power Generation	China	Utility
DONG Energy	Denmark	Utility
Duke Energy	United States	Utility
E.ON	Germany	Utility
E.ON Sverige	Sweden	Utility
EDF	France	Utility
EDF-Luminus	Belgium	Utility
Electrabel	Belgium	Utility
Eletrobras (Centrais Eletricas Brasileiras SA)	Brazil	Utility
Eneco	Netherlands	Utility
Enel	Italy	Utility
Engie	France	Utility
Eskom	South Africa	Utility
Essent	Netherlands	Utility
Federal Electricity Commission (CFE)	Mexico	Utility
Fortum Power and Heat	Sweden	Utility
Gazprom	Russia	Utility
Greenchoice	Netherlands	Utility
Iderbola	Spain	Utility
Kansai Electric Power Company	Japan	Utility
KEPCO	South Korea	Utility
Kyushu Electric Power Company	Japan	Utility
NextEra Energy	United States	Utility
NRG Energy	United States	Utility
NTPC	India	Utility
Nuon	Netherlands	Utility
Paiton Energy	Indonesia	Utility
Perusahaan Listrik Negara (PLN)	Indonesia	Utility
RusHydro	Russia	Utility
RWE	Germany	Utility
Southern Co	United States	Utility

Company	Country	Sector
Tohoku Electric Power	Japan	Utility
Tokyo Electric Power Company	Japan	Utility
Tractebel (Tractebel Energia)	Brazil	Utility
Vattenfall	Sweden	Utility
Enercon	Germany	Wind turbine manufacturers
Gamesa	Spain	Wind turbine manufacturers
GE Wind	United States	Wind turbine manufacturers
Goldwind	China	Wind turbine manufacturers
Mingyang	China	Wind turbine manufacturers
Nordex	Germany	Wind turbine manufacturers
Siemens	Germany	Wind turbine manufacturers
Suzlon Group	India	Wind turbine manufacturers
United Power	China	Wind turbine manufacturers
Vestas	Denmark	Wind turbine manufacturers

Table 111 provides the list of researched renewable energy projects.

Table 111 Researched renewable energy projects

Renewable energy projects
123Venture Ortaffa PV Portfolio
2006 Union Fenosa Project Financing
Abengoa & E.ON "Heliloenergy 2" Ecija STEG Plant
Abengoa Cerro Dominador Antofagasta STEG Plant Refinancing
Abengoa Solacor I & II STEG Portfolio
Abengoa Solana STEG Plant
Abengoa Solnova 3 STEG Plant
Abengoa Solnova 4 STEG Plant
Abengoa Solnova I STEG Plant
ABO European Wind Portfolio France
Abraxa Albertura PV Plant
Acciona Alvarado "La Risca" STEG Plant Refinancing
Acciona Amareleja PV Plant Phase I
Acciona Eurus Wind Farm Refinancing

Renewable energy projects

Acciona Palma & Majadas STEG Portfolio
Acciona Palma & Majadas STEG Portfolio Bridge Financing Refinancing
ACS Cobra Extresol I STEG Plant
ACS Cobra Extresol III STEG Plant
ACS Manchasol I STEG Plant
ACS Manchasol II STEG Plant
Activ Solar Perovo PV Plant Refinancing
ACWA & SolAfrica Bokpoort STEG Plant
AES Corp Saint Patrick Wind Portfolio
Agrupacion Eolica France Wind Portfolio
Agua Caliente PV Plant
Agua Doce Wind Farm
Airtricity FINCO Wind Project
Airtricity USA Project Portfolio
Akua Energy Corsica PV Portfolio
Akua Energy Gatinais Wind Farm
Akua Energy Verrerie PV Plant
Aldesa Spanish Wind Farm and PV Portfolio
Aldesa/ Enersol Santa Lucia Spanish Portfolio
Alta Wind Farm Phase I
Alte Liebe I Ltd Refinancing
Amliden Wind Farm
Amliden Wind Farm Phase II
Ancora Portugal Wind Portfolio
Andalucia Wind Portfolio Refinancing
Andasol I STEG Plant
Andasol II STEG Plant
Andretta Bisaccia Wind Portfolio
Antelope Valley Solar Ranch 1 PV Plant
Aoyama Kogen Wind Farm Phase II
Aquila Capital Pompogne PV Plant Refinancing
ArcLight Capital Geothermal Portfolio-refinancing
Arise Windpower Frosvida Wind Farm
Arise Windpower Frosvida Wind Farm Refinancing
Arise Windpower Idhult Wind Farm Refinancing
Arise Windpower Sweden Wind Portfolio
Armow Wind Farm
Ashalim I Sun Negev STEG Plant
Axa Private Equity Acquisition

Renewable energy projects

B&B Gulf Wind Turbine Supply Loan Pre-construction
Babcock & Brown Kallista French Wind Portfolio Refinancing
Babcock and Brown Fruges Wind Portfolio
Babcock and Brown Wind Partners 2007 Portfolio Refinancing
Babcock and Brown Wind Portfolio in France
Babcock US Wind Farm US06 Portfolio Tax Equity
Baywa La Coste Sylva and Trivale PV Plant
BBWP Global Additional Facilities 1 Acquisition
Beauce Wind Portfolio Acquisition
Beaufort Wind UK Wind Portfolio Refinancing
Beberibe Wind Farm
Beijing International New Energy Inner Mongolia Huitengxile Wind Farm
Belwind Offshore Wind Farm Phase I
Bievre Wind Farm
Blekhem Wind Farm
Boco Rock Wind Farm Phase I
Bons Ventos Ceara Wind Portfolio Refinancing
Boralex Avignonet-Lauragais PV Plant
Boralex France Wind Portfolio
Boralex La Vallee Wind Farm
Borkum West II Offshore Wind Farm Phase I
Bow Lake Wind Farm
Brasventos Rio Grande do Norte Wind Portfolio Refinancing
Breeze 1 Max Two Bond
Breeze Three Bond
Breeze Two Energy GmbH & Co KG Refinancing
Brennand CHESF Bahia Wind Portfolio Refinancing
BrightSource Ivanpah STEG Portfolio
Budduso Wind Farm
Buffalo Gap Wind Farm Phase II
Buffalo Gap Wind Farm Phase III
Buffalo Mountain Wind Energy Project
Burgerwind Zijpe Wind Farm
Butendiek Offshore Wind Farm
BWFPL Tamil Nadu Wind Portfolio Phase I
Cabeco Preto and Pedra do Reino Wind Portfolio SUDENE Refinancing
Cabezo San Roque Wind Farm Refinancing
Caithness California Wind Holdings LLC Refinancing
Caithness Coso Refinancing

Renewable energy projects

Caithness Energy Shepherds Flat Wind Farm Tax Equity
California Valley Solar Ranch PV Portfolio
Challengeville Wind Portfolio
Candeeiros Wind Farm
Candeeiros Wind Farm Refinancing
Caney River & Rocky Ridge Wind Portfolio Tax Equity
Canuda Wind Farm
Capo Rizzuto Wind Farm Refinancing II
Cardus Vitoria Wind Farm
Casa dos Ventos Santa Brigida Wind Portfolio
Casa dos Ventos Santa Brigida Wind Portfolio Bridge Refinancing
Casa dos Ventos Santa Brigida Wind Portfolio Refinancing
Casa dos Ventos Santa Joana Wind Portfolio BNDES Bridge Refinancing
Casa dos Ventos Santa Joana Wind Portfolio BNDES Refinancing
Catalina PV Plant I Tas Equity
Cedar Creek I Wind Farm
Cedar Creek II Wind Farm
Cedro Hill Wind Farm
Cemex Ventika Wind Portfolio
Cennergji Amakhala Emoyeni Wind Farm
CEPALCO Cagayan de Oro PV Plant
CGNWP Ximeng Huitengliang Wind Farm
Champs Perdus Wind Farm
Chasse Maree Wind Farm
Chikugogawa Jariisago Cooperative Kurume PV Plant
China Huaneng Group Fixin Xingfudi Wind Farm Phase II
Cimarron II & Ironwood Phase I Wind Farm
Collgar Wind Farm
Comber Wind Farm
Comber Wind Farm Refinancing
Contour Global Asa Branca Wind Portfolio
Copel Rio Grande do Norte Wind Portfolio
Copper Mountain II PV Plant Phase I & II Refinancing
Cormainville Guionville Wind Farm
CPFL Energias Renovaveis Joao Camara Wind Portfolio
CPFL Parazinho Wind Portfolio
CPFL Renovavaeis Atlantica Wind Farm Portfolio Bridge Refinancing
CPFL Renovavaeis Rio Grande do Norte Wind Portfolio Refinancing
CPFL Renovaveis Atlantica Wind Farm Portfolio Refinancing

Renewable energy projects

CPV Keenan II Wind Farm
Daisy Technology Lesnovo Geothermal Plant
DELETE SIIF Northern Portugal Wind Portfolio
Delta Eemshaven Wind Farm
DESA Galicia
DESA Morro dos Ventos Wind Portfolio - Refinancing
Desenvix Brotas de Macaubas Wind Portfolio
Desert Sunlight PV Plant
Dioxipe ASTE 1 A&B STEG Portfolio
Dioxipe Astexol II STEG Plant
Djursland Anholt Offshore Wind Farm
E.n.o Energy Rehfeld Wind Farm
E.ON Champion Wind Farm
E.ON US Wind Portfolio Refinancing
Eaga Nottingham PV Portfolio
Eco Delta Corsica PV Portfolio
Eco Delta Les Mees PV Plant
Ecopart Gargau Wind Farm
EcoPower Bonaire Wind Biodiesel Power Plant
EcoPower Bonaire Wind Biodiesel Power Plant Preconstruction
EDC Burgos Wind Farm Portfolio Refinancing
EDF Arada-Montemuro Wind Farm
EDF Gabardan II PV Plant
EDF Gabardan IV PV Plant
EDP Renovaveis Brasil Tramandai Cidreira I Wind Farm
Eemshaven Wind Farm
El Arrayan Wind Farm
Electabel Curbans PV Project
Electrawinds Middelkerke PV Plant
Eletrosul Cerro Chato Wind Portfolio
Eletrosul Santana do Livramento Wind Portfolio Refinancing
Elista Wind Farm
Emmapolder Wind Farm
Emu Downs Wind Farm
Enel Brazil Wind Portfolio - Refinancing
Enel Brazil, Romania & US Wind Portfolio
Enel Union Fenosa Spanish Wind Portfolio
ENEOP 2 Portuguese Wind Portfolio Phase III
ENEOP 2 Portuguese Wind Portfolio Phase I

Renewable energy projects

Enerfin Elecnor 2011 BNDES Wind Portfolio
Enerfin Galicia Wind Portfolio
Enerfin Pasada de la Tejada and Las Herrerias Wind Farms
Energia Renovables de la Region de Murcia Wind Portfolio
Energio Ceara Wind Portfolio
Energisa Renascenca Wind Portfolio Bridge Refinancing
Energisa Renascenca Wind Portfolio Refinancing
Enertrag Picardie Wind Portfolio Hg Capital Acquisition
Enfinity & Waterland Fieva PV Portfolio
Enfinity Belfuture PV Portfolio
Enfinity Flanders PV Portfolio Refinancing
Entenergy US Wind Portfolio Refinancing
EnXco Fenton Wind Energy Farm
Eolfi French Wind Portfolio
Eolfi La Plaine Auboise Wind Farm
Eolfi Windfall 3 Wind Project
Eolica Campollan Wind Portfolio
Equinox 1D PV Portfolio
Eskom Upington STEG Plant
Essaouira Wind Park
Ethiopian Electric Power Adama Wind Farm Phase II
Eupuron La Chapelle Wind Portfolio
Eurovento Galicia Wind Portfolio II
Eurowatt Pas de Calais Wind Portfolio
Eurus Toyokoro PV Plant
Evelop Princess Amalia Offshore Wind Farm
Faisa Wind Portfolio
Falck France Wind Portfolio
Fantanele Wind Farm Phase I Refinancing
FCC Eolicos Oiventol Kestrel Wind Portfolio Acquisition
Fierville Wind Portfolio Acquisition
First Solar Luz del Norte PV Plant
First Wind Milford Wind Corridor Wind Farm Phase I
First Wind Oakfield Wind Farm
Flat Ridge Wind Farm Phase II Refinancing
FMS Nishigo PV Plant
Fond d'Etre and Le Florembeau Wind Farm
Fond Gerome Wind Farm Acquisition
Fonds de Fresnes & Sablons Wind Farms

Renewable energy projects

Fowler Ridge Wind Farm Phase I Refinancing
Fowler Ridge Wind Farm Phase II Refinancing
Foye Wind Farm
FPL Energy National Wind Portfolio LLC Refinancing
FPL Energy National Wind Portfolio Refinancing
Fred Olsen United Kingdom Wind Portfolio Refinancing
Futech Belgium I PV Plant
Futech Belgium II PV Plant
Futech Belgium III PV Plant
Futech Belgium IV PV Plant
Futech Belgium V PV Plant
Gabardan PV Plant DIF Acquisition
Galvao Energia Sao Bento do Norte Wind Portfolio
Gamesa Galicia and Cataluna Wind Portfolio Acquisition
Garbielsberget Wind Farm Phase I
Garbielsberget Wind Farm Phase II
Garcelles-Secqueville Wind Farm Refinancing
GA-Solar Calsparra & Benahadux PV Portfolio Refinancing
Gemini Offshore Wind Farm
Generg Portugal Wind Portfolio
Generg Portugese Wind & Small Hydro Portfolio Refinancing
Genesis Blythe STEG Plant Portfolio
Geo Dipa Energi Patuha Geothermal Plant
Geothermie Unterhaching Geothermal Plant
Gestamp Asetym Murcia PV Portfolio Fotowatio Acquisition
Gestamp France PV Portfolio
Gestamp Solar and FV Ensol PV Portfolio
Gestamp Solar Daigo PV Plant
Gettnabo Wind Farm
Gigha Wind Farm
Glennmont Frencq and Fresnoy Folny Wind Farms
Global Tech I Offshore Wind Farm
Grand Renewable PV Plant
Grand Renewable Wind Farm
Grand Ridge and McAdoo Wind Farms Tax Equity
Granulutex Cruas PV Plant
Green Frontier Wind Portfolio Refinancing
Green Power Pomorze Wind Farm
Gueltas Noyal Pontivy Wind Farm

Renewable energy projects

Guijo I and II
Gunfleet Sands Offshore Wind Farm Marubeni Acquisition
GWP Gangwon Wind Farm
Hachiryu Wind Farm
Hallett IV Wind Farm Refinancing
Hashikami Mirai Energy Park Danjo PV Plant
Hatchet Ridge Wind Farm
Havelland Wind Portfolio
Holmen Mirova Varsvik Wind Farm
Horns Rev Offshore Wind Farm Expansion
Hurrikan Power Wind Farm Acquisition
Iberdrola Neoenergia Rio Grande do Norte & Bahia Wind Portfolio I
Iberdrola Neoenergia Rio Grande do Norte & Bahia Wind Portfolio II
ICE Las Pailas II Geothermal Plant
Imperial Solar South PV Plant
Imperial Solar South PV Plant Refinancing
IMPESA Ceara Wind Auction 2009 Portfolio
Impsa Ceara Wind Portfolio
Impsa Santa Catarina Wind Portfolio
Infigen Fruges Wind Portfolio Platina Partners Acquisition
Infinis UK Wind Portfolio Refinancing
Invenergy Grand Ridge Wind Farm Expansion
Invenergy North American Wind Portfolio Acquisition
Invenergy US Wind Portfolio
Invenergy US Wind Portfolio Preconstruction
IP Maestrale Investments Wind Portfolio Refinancing
Is-en-Bassigny Wind Farm
Italy Wind Portfolio F2i ER 2 SrL Acquisition
IVPC 2000 Wind Farm Refinancing
IVPC 4 Refinancing
Jadraas Wind Farm Phase I & II
Japan Asia Group Hokkaido PV Plant
Jarmunderod Wind Farm Refinancing
JEN Holdings Tainai Wind Farm
JGC Kamogawa PV Plant
JGC Oita Sunflower PV Plant
Jiangsu Longyuan Wind Power Rudong Huangang Dongling Wind Farm
John L. Featherstone Salton Sea Geothermal Plant
JRE Mito New Town PV Plant

Renewable energy projects

Julian Co Ltd Midorinosato PV Plant
JWD Rokkasho Fukkoshi Taichi Wind Farm
KaXu Solar One STEG Plant
KenGen Olkaria I (Unit 4 & 5) and IV Geothermal Power Plant
Khi Solar One STEG Plant
Kingston PV Plant
KLS Jaffna Integrated Project
Koegorspolder Wind Farm
Koegorspolder Wind Farm DIF Acquisition
Krabbersgat Wind Farm
Kruger Energy Ontario Wind Portfolio Refinancing
Kyocera Nanatsujima PV Plant
La Boga Wind Farm
La Chaude Vallee Wind Farm
La Compagnie de Vent Fienvillers Longchamps Wind Farm
La Haute Lys Wind Portfolio
La Magascona PV Plant
La Voie Romaine Wind Farm Refinancing
Lake Bonney Wind Farm Phase II
Lake Turkana Wind Farm
Lakefield Wind Farm
Laura Coal Wind Farm
Le Grand Champ Wind Farm
Le Haut des Ailes France Wind Farm
L'Erdle Wind Farm
Les Combles Wind Farm Acquisition
Les Hauts Pays Wind Farm Phase I & II
Les Herons Wind Farm Acquisition
Les Mees PV Portfolio Acquisition
Les Metairies Wind Farm
Lestrade Wind Farm
L'île d'Olonne Wind Farm
Limon Wind Farm Tax Equity
Lincs Offshore Wind Farm
Logan's Gap Wind Farm Phase I Acquisition
London Array Offshore Wind Farm Phase I DONG Refinancing I
London Array Offshore Wind Farm Phase I DONG Refinancing II
London Array Offshore Wind Farm Phase I Masdar Refinancing
Longyuan Pingtan Changjiangao Wind Farm Phase II

Renewable energy projects

Louville & La Remise des Bruyeres Wind Portfolio
Louville & La Remise des Bruyeres Wind Portfolio Mistral Acquisition
LS Power Arlington Valley PV Plant Phase II
LS Power Arlington Valley PV Plant Refinancing
Luzentia Jumilla Hoya de los Vicentes PV Plant
Macarthur Wind Farm Malakoff Corp Acquisition
Maevaara Wind Farm
Magnum Capital Enersis II Wind Portfolio Refinancing
Magtel Fuente Palmera STEG Plant
MAHAGENCO Sakri PV Portfolio Phase I & II
Maia Eolis Wind Portfolio
Maple Ridge and Blue Canyon Wind Farms Refinancing
Marena Wind Portfolio
Markbygden Pitea Skogberget Wind Farm
Masdar Shams 1 STEG Plant
MASEN Ouarzazate STEG Plant Phase I
Meerwind Sud und Ost Offshore Wind Farm Phase I
Merinda Wind Portfolio
Mesquite Creek Wind Farm
Messangis PV Plant Marguerite Fund Acquisition
Miller Mountain Wind Farm
Mitsubishi Corp ESS Tamano PV Plant
Mont Hezecques Wind Farm Acquisition
Moulins de Boulay Wind Farm POWEO Acquisition
Mouzeuil St Martin Wind Farm
Mullberg Wind Farm
Musselroe Wind Farm Refinancing
NEO Alegria II Wind Farm
Neoen Cestas PV Park
NEP USA Turbine Supply Loan
Nereva & International Power Tarfaya Wind Farm
Nextera Termosol STEG Plant
Nextera Texas Wind Portfolio Refinancing
Nibas Wind Farm
Nippon Paper Mega Solar Komatsushima PV Plant
Noble- CIT Turbine Supply Loan
Noble New York Wind Portfolio I and II
Noble New York Wind Portfolio II
Noble New York Wind Portfolio II GE EFS Tax Equity

Renewable energy projects

Noble New York Wind Portfolio II Refinancing
Noordoostpolder Wind Farm
Nooroostpolder Urk Offshore Wind Farm
Nordex France Wind Portfolio Glennmont Acquisition
Nordex Fresnes-en-Saulnois Wind Farm Acquisition
Northern Frontier Wind Funding LLC ReFinancing
Northern Frontier Wind Portfolio Tax Equity
Northland Power Northern & Central Ontario PV Portfolio
NorthWind Bangui Bay Wind Farm Phase I & II
Northwind Offshore Wind Farm
NREA & KFW Gulf of El Zayt Wind Farm
NREA Zafarana V Wind Farm
NRG Energy Project Amp PV Plant
Obayashi Ashikita PV Plant
Odebrecht Rio Grande do Sul Wind Portfolio
Omega Parnaiba Wind Portfolio
ONEE Eolien Wind Portfolio
Orka Puurs PV Plant
Ormat Heber Geothermal Plant I & II Expansion Refinancing
Pacific Hydro Vale dos Ventos Wind Portfolio
Pattern Ocotillo Wind Farm
Pedra do Sal Wind Farm
Pertamina Lumut Balai Geothermal Project
Pertamina Ulubelu & Lahendong Geothermal Projects
Pertamina Ulubeu & Lahendong Geothermal Projects
Photovoltaïque de la Garrigue PV Plant Amerenco Acquisition
Picardie Wind Portfolio Financing
Pinyon Pines Wind Portfolio Refinancing
Plana de Jaretta and La Carracha Refinancing
PLN Lahendong Sulawesi Geothermal Plant Unit II
PLN Ulubelu Geothermal Project Unit I & II
Pompogne PV Portfolio Captial Stage Acquisition
Princay Wind Farm
Prince Township Wind Farm Phase I & II
Prince Township Wind Farm Refinancing
Project S Trinergy Wind Refinancing
Project Solaris
Puglia and Molise Wind Farms
Quatre Valleys Portfolio Refinancing

Renewable energy projects

Queiroz Galvao Ceara Wind Portfolio Refinancing I
RA Parque Solar
Rabbalshede Munkedal Wind Portfolio
Rabbalshede Sweden Wind Portfolio
Randstad Project Transmission Facility
Ravne Wind Farm
RE Ontario PV Portfolio
Reliance Power Ladkan STEG Plant
Renerco Saint Fraigne Wind Farm
Renomar Valencia Wind Portfolio
Renova Energia 3rd Reserve Auction Wind Portfolio
Renova Energia Alto Sertao III Wind Portfolio Refinancing
Renova Energia Bahia Wind Portfolio I
Renova Energia Bahia Wind Portfolio II BNDES
Renova Energia BNDES Wind Portfolio
Renova Energia Wind Portfolio Bridge Financing 1
Renova Energia Wind Portfolio Bridge Financing 2
Renova Nasushiobara Solar LLP PV Plant
Renovalia Energy Puertollano PV Plant Phase I
Renovalia Reserve Piedra Larga Wind Farm Phase II
RES Hackleberry Wind Farm
RES Havsnas Wind Farm
Rete Rinnovabile Italian PV Portfolio Refinancing
Rio do Fogo Wind Farm
Rodsand II Offshore Wind Farm
Rodsand II Offshore Wind Farm Seas-Nve Acquisition
Rokas Patriarchias Wind Farm
Ronchois Wind Farm
Rosa dos Ventos Wind Farms Refinancing
Rosa dos Ventos Wind Portfolio
Rotor Elekratik Bahce Wind Farm
RWE Npower UK Wind Portfolio Beaufor Wind Acquisition
Sacyr-Siemens 'Solucia' STEG Portfolio Phase I
Saikyo Shizen Energy Hofu PV Plant
Saint Riquier III and IV Wind Farms
Sallen Wind Farm
Sand Bluff Wind Farm
Sarulla Geothermal Project
Scheuten Veurne PV Plant

Renewable energy projects

ScienTec KK Missawa PV Plant
Seigneurie de Beaupre Wind Farm Phases I & II
Sempra Mesquite Solar I PV Plant
Sherbino I Wind Farm
Sheringham Shoal Offshore Wind Farm Statkraft Acquisition II
Sheringham Shoal Offshore Wind Farm Transmission Facilities Blue Transmissino Acquisition
Sierra Juarez Wind Farm
SIIF Foz do Rio Choro Wind Farm
SIIF Icaraizinho Wind Farm
SIIF Paracuru Wind Farm
SIIF Praia Formosa Wind Farm
Silver Ridge Toulouse & Lyon PV Portfolio Refinancing
Simizu Corp Akaho PV Plant
Societa Energie Rinnovabili Italy Southern Italy Wind Portfolio Refinancing
Societa Energie Rinnovabili Southern Italy Wind Portfolio
Sodra Kara Wind Farm
Sofivent & Valorem Bourgneuf-en-Retz Wind Farm
Sojitz Kamikita Rokkasho PV Plant
Solaben Lograsan II & III Portfolio
Solaire Direct Esparron Saint-Hilaire PV Project
Solaire Direct Jussac PV Plant
Solaire Durance Les Mees PV Portfolio Refinancing
Solairedirect ARSAC6 & ARSAC 8 PV Plant
Solairedirect South of France PV Plant
Solairedirect Southeastern France PV Portfolio Refinancing
SolarCity & Goldman Sachs US PV Portfolio Tax Equity
Solarezo Saint-Clar PV Plant
Solarig Bonnat PV Plant Refinancing
Sonnex Romilly PV Plant Refinancing
Sorashia Hachinohe PV Plant
South Kent Wind Farm
SPEX Merida PV Plant
Star Wayang Windu Geothermal Project Unit I & Unit II Refinancing
Star Wayang Windu Geothermal Project Unit I Refinancing
Star Wayang Windu Geothermal Project Unit II
Stateline Wind Energy Center Refinancing
Sun Development Guadeloupe & Martinique PV Portfolio
SunEdison Pacifico & Choluteca PV Portfolio
SunEdison Rovigo PV Plant

Renewable energy projects

SunPower & Citi, CS US Residential PV Portfolio Tax Equity
SunPower & Google US Residential PV Portfolio Tax Equity
SunPower Solar Star PV Plant
SunRay Renewable Energy Montalto di Castro PV Plant Phase I
Sunrun, JPM & US Bank US Residential PV Portfolio Tax Equity
Supreme Energy Rantau Dedap Geothermal Project Refinancing
Svartvallsberget Wind Farm
Sweetwater Wind Farm Phase II Refinancing
Taaleritehdas Honkajoki Wind Farm Refinancing
Tafila Wind Farm
Tangier I Wind Farm
Tanzawa Captial Yuza PV Plant
Tenaska ISEC West PV Plant
Texas Gulf Wind Farm I
Texas Gulf Wind Farm I Pattern Acquisition
Thanet Offshore Wind Farm Transmission Facility Acquisition
Theolia Biesles Wind Farm
Theolia France Wind Portfolio
Theolia French Wind Portfolio
Tholen Wind Farm
Thornton Bank Offshore Wind Farm Phase I
Thornton Bank Offshore Wind Farm Phase II & III
Three Wind Holdings Refinancing
Tongonon and NAPOCOR Palinpinon Geothermal Plants Acquisition
Topaz PV Plant
Topaz PV Plant Pre-construction
Torresol Energy Gemasolar STEG Plant
Torresol Valle 1 STEG Plant & Torresol Valle 2 STEG Plant
Toul-Rosieres II PV Plant
Tractebel Trairi Wind Portfolio Refinancing
Trinergy Wind Portfolio Acquisition
Tsitsikamma Community Wind Farm
T-Solar Spain PV Plants Phase I
Unison Youngduk Wind Farm Refinancing
UPC Turbine Supply Loan 2 Refinancing
UPC Turbine Supply Loan 3 Refinancing
Urbasolar Gardanne PV Plant
USE Zellik PV Plant
Velocita Monts du Lomont Wind Farm Phase I

Renewable energy projects

Ventominho Wind Farm I & II

Ventos do Sul Osorio Wind Farm

Ventos Potiguares Uniao dos Ventos Wind Portfolio

Verace Geribatu Wind Portfolio Refinancing

Volkswind Val de Noye Wind Farm

Vortex Polish Wind Portfolio

VRD Flanders PV Plant

Walloon Wind Portfolio

Walney Island Offshoren Wind Farm PPGM Triodos Refinancing

Waterloo Wind Farm

Wayang Windu Geothermal Project - Phase III & IV

West of Duddon Sands Offshore Wind Farm

Westermose Rough Offshore Wind Farm GIB and Marubeni Refinancing

White Creek Wind Farm

WindVision Estinnes Wind Farm

WindVision Leuze en Hainaut Wind Farm

Windy Flats Wind Farm Phase II

Ytterberg Wind Farm

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