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Modifying Development Finance Institutions' Investment Strategies to Capture Climate Targets

A Case Study on Norfund and its Clean Energy Department

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Acknowledgment

The process of writing this master thesis has been challenging, inspiring, and for time to time frustrating. *"Modifying Development Finance Institutions' Investment Strategies to Capture Climate Targets"* is the outcome generated to first and foremost fulfill the graduation requirements for a master's degree in Economics and Business Administration at Copenhagen Business School (CBS). In the period from October 2019 to May 2020, we prepared, researched, conducted interviews and wrote the following thesis investigating how DFIs can modify their investment strategies considering the stringent climate targets. The first challenge was finding and agreeing on a topic that would we both would find interesting and challenging. Through connections, we collaboration with Norfund to find common ground and relevance for our research and in cooperation with our supervisor, we formulated the research question, guiding this thesis.

We want to thank Karoline Teien Blystad and Mark Davis at Norfund for the generosity and helpfulness providing information and giving us valuable inputs for our research. Secondly, we would like to thank our supervisor, Ed Romein, for giving us excellent guidance, insights and always explaining figuratively. Additionally, we would end by thanking all the DFIs that participated in our research.

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Abstract

In light of increased recognition of climate change as an ecological and humanitarian threat, climate targets have become more stringent to improve the world's ability to minimize the consequences. The developing countries experience the strongest impact of climate change and are at the same time poorly equipped to finance mitigation and adaptation investments projects to reach the targets. Hence, the purpose of the paper is to investigate whether DFIs should increase their involvement. DFIs have the ability to bridge the gap between the public and private sectors in developing countries. Greenhouse gases (GHG) from fossil fuel consumption are often cited as the major reason for climate change. Much of this is due to power generation. DFIs should therefore arguably increase investments in the clean energy space. This paper is motivated by the limited literature on why DFIs should move from solely a developmental focus to a dual focus on development and climate. Therefore, a case study of the Norwegian DFI, Norfund, and its Clean Energy department was applied as a force of example.

The stringent climate targets are affecting the DFIs investment strategies, due to the increased attention to achieve these from a number of stakeholders. The DFIs will become more climate-focused in the future and will look for more investment opportunities in the clean energy sector. The empirical data and academic literature show that the level of investment in clean energy needs to be increased considerably if we are to reach the targets on time. However, DFI's investments in the sector have decreased due to high risks and shortage of bankable projects. Therefore, DFIs may need to modify their investment strategies to be able to increase the investment level in the clean energy sector.

DFIs should increase their geographical investment focus to include more developed countries that emit higher levels of GHG, increase investment horizon and re-evaluate their financial return expectations to be able to follow a climate-focused energy investment strategy. This will give them the opportunity to grasp higher developmental effect levels in the long run.

The findings of the paper can be generalized in an analytical nature to advice DFIs on their future investment strategies and offer a new line of thought for foreign direct investments strategies to incorporate development and climate focus.

List of Abbreviations

AREI	Africa Renewable Energy Initiative
AU	African Union
CDC	Commonwealth Development Corporation
CE	Clean Energy
CO2	Carbon Dioxide
COP21	The 2015 United Nations Climate Change Conference
DAC	Development Assistance Committee
DEG	Deutsche Investitions- und Entwicklungsgesellschaft
DFI	Development Finance Institution
EDFI	European Development Finance Institutions
FDI	Foreign Direct Investment
FMO	Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N.V.
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GNI	Gross National Income
Gt	Gigatons
GtCO2e	Gigatons of equivalent Carbon Dioxide
GW	Gigawatts
IC	Investment Committee
ICCF	The Interact Climate Change Facility
IFI	International Financial Institutions
IFU	Investeringsfonden for Udviklingslande
INDC	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
IPP	Independent Power Producers
IRR	Internal Rate of Return
LDC	Least Developed Countries
LMIC	Lower Middle Income Countries
LTWP	Lake Turkana Wind Power
MW	Megawatt
MWp	Megawatt peak

NDC	Nationally Determined Contributions
NEP	National Energy Policy
ODA	Official Development Assistance
OECD	The Organization for Economic Co-operation and Development
SDG	Sustainable Development Goal
TWh	Terawatt hour(s)
UMIC	Upper-Middle Income Countries
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNPD	United Nations Development Programme
WMO	The World Meteorological Organization
WTO	The World Trade Organization
ZAR	Zuid Afrikaanse Rand (South African Rand)

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1.Introduction

1.1 Problem Area

1.1.1. Risk Averse Private Investors

In 2015, the introduction of the United Nation's 17 Sustainable Development Goals (SDGs) marked a shift in the development debate. The SDGs aim at promoting economic, social and environmental development globally, emphasizing a development model where the achievement of the goals relies on equal participation of the public and private sector (Attridge, Te Welde & Andreasen, 2019). Attridge et al. (2019) state that the international community's strategic shift was the recognition of the central role of the private sector in tackling poverty, due to private investment and innovation being key drivers of "*productivity, inclusive economic growth and job creation*" (p.12). However, collecting private investment and support has proven to be difficult in developing countries. Private investors often require risk-return profiles at market rates, invest with a short-term perspective and lack the necessary knowledge that is needed to enter markets in the developing world (Norfund, 2020). Consequentially in 2015, only 1 per cent of global Foreign Direct Investment (FDI) went to low-income countries. 58 per cent targeted high-income countries (Norfund, 2020). Hence, Development Finance Institutions (DFIs) are playing a crucial role in achieving the SDGs.

DFIs are described as specialized development organizations and they are typically majority-owned by national governments (EDFI, n.d.-a). Attridge et al. (2019) argue that due to DFIs mandate, they can support economic growth in the world's most challenging markets through risk-sharing, supporting activities, and financing. Hence, DFIs are needed to mobilize commercial investors and help bridge the gap between the private and public sectors (Norfund, 2020). The requirement for private investments in achieving growth has been recognized by policymakers in low- and middle-income countries. Therefore, western countries are increasing their allocation of funds to DFIs investing in private sector projects (Norfund, 2020). According to the Center for Strategic and International Studies (CSIS), this has led to DFIs being one of the fastest-growing sources of development finance in the world (Norfund, 2020).

As private investors become more risk averse (Norfund, 2016), the DFIs roles are becoming more critical in order to achieve the SDGs (Norfund, 2016). However, the positive effects of development are becoming increasingly vulnerable due to the destabilizing effects of environmental change (Purvis, 2013). Risks associated with climate change may derail future economic growth and increase socio-economic inequality worldwide (Purvis, 2013). For instance, the United Nations Development Programme (UNDP) has estimated that by 2030 more than 100 million people could fall back into poverty due to climate change, while over 200 million people could be displaced due to more frequent and severe climatic disasters (Khoday & Ali, 2018). This may negatively influence the otherwise positive impact of the DFI's investments.

1.1.2. Climate Change and Developing Countries

During the United Nations General Assembly in October 2019, the delegates described climate change as one of the greatest threats facing our planet (United Nations, 2019). The changes in climate have induced repercussions on both human and natural systems throughout the world (IPCC, 2014a). The Paris Agreement, signed in 2015, undertakes ambitious efforts to minimize this global ecological and humanitarian threat. The agreement shall strengthen the global response to combat climate change as well as adapting to its effects. The goal is to limit the increase in global average temperature to 2°C during this century (United Nations, 2015a). However, continuing with the current policies may increase the average global temperature by 3.1-3.7°C (Ritchie & Roser, 2019).

Botswana's delegate at the UN General Assembly stated that the adverse effects of climate change are seriously hindering many developing nations' efforts in achieving the SDGs, including extreme weather causing droughts and overflooding (United Nations, 2019). Therefore, the Paris Agreement incorporates the enhancement of support to assist developing countries in adapting to effects related to climate change and upholding the "below 2°C" goal (United Nations, 2015a).

The World Bank (2017) stated that *"poverty eradication and sustainable development goals cannot be met unless there is a collective push to address climate change at the same time."* Climate change has a direct impact on poverty since the poor are the most vulnerable

to the environment they live in (Kleiterp & Wiersma, 2017). Low- and middle-income countries are the worst affected by the impacts of climate change, even though their involvement to cause this problem has been proportionately small (Norfund, 2020). They are especially vulnerable as they rely heavily on primary resources, such as local forest, land, and water, and lack access to technology and finance (Kleiterp & Wiersma, 2017; Ravindranath & Sathaye, 2003). As a result, many people will fall back into poverty or be unable to take the crucial step out of it.

The global greenhouse gas (GHG) emissions are the main reason for global warming (IPCC, 2014c). Most of the GHG emissions released into the atmosphere are due to fossil fuel energy sources (IPCC, 2014c). It is predicted that global energy demand will increase by 30 per cent, mostly in developing countries (IRENA, 2016). Africa is forecast to increase its electricity demand by 300 per cent by 2030 since standards of living are improving and the continent is experiencing continuing industrialization (IRENA, 2016). Hence, to be able to reduce GHG emissions, considering the increasing demand for energy, investments in the clean energy sector need to be increased to offset the consequences of fossil fuels.

1.2 Research Purpose and Approach

The purpose of this research paper is to investigate whether DFIs should increase their involvement in the fight against climate change. The study aims to contribute to the discussion, if DFIs should move away from solely a developmental focus and why it could be beneficial, based on academic research and strategic advice. It will do so by showing that the consequences of climate change have become more visible and therefore created momentum for governments to toughen their climate targets. By analyzing if the stringent climate targets are affecting the DFIs and if so, how they are affected, the paper will seek to investigate how DFIs can restructure their investment strategies to incorporate it.

A case study of the Norwegian Investment Fund for Developing Countries (Norfund), specifically of Norfund's Clean Energy (CE) department, is conducted. Norfund is a DFI funded by the Norwegian government and is the government's most important tool for reducing poverty and strengthening the private sector in developing countries (Norfund, n.d.-a). Its mandate is to *"assist in developing sustainable business and industries in developing*

countries" (Norfund, n.d.-a). Norfund was chosen as a case due to Norway's expertise within clean energy technologies. The energy sector has become its main investment focus. Its CE department manages approximately 50 per cent of the total portfolio. Due to the department's size and importance, an in-depth analysis was seen fit to be able to fulfil the purpose of the paper. This was also due to the belief that a more climate-focused investment strategy would affect the department the most, as clean energy is seen as one of the main solutions for reaching the climate targets. A case study on Norfund is appropriate as it is one of the few DFIs who have started discussing the change in mandate to become more climate-focused.

1.3 Research Question

Climate change may limit future economic growth and increase the socio-political inequality, where lower- and middle-income countries are especially vulnerable (Purvis, 2013). Therefore, global climate targets, as set out in the Paris Agreement and the SDGs, have been given a strict deadline that has to be met to be able to achieve a sustainable future. DFIs play an important role in achieving these targets (Xu et al. 2019); they bridge the gap between the private and public sectors in the world's most vulnerable countries (Norfund, 2020). Now the positive impact in developing countries from DFIs investments is being threatened by the effects of climate change. Even so, as of today, DFIs do not have a strong climate-focus incorporated into their investment strategies. If the positive impact of the DFIs investments is being offset by climate change effects, should they not tackle the problem at its roots? Their investments are critical in order to achieve a sustainable future (EDFI, 2016). This critical topic needs to be addressed; hence the thesis aims to answer the following research question:

"How do stringent climate targets modify DFIs energy investment strategies?"

The research question will be answered with the following sub-questions:

- What are the climate targets, and why are they becoming more stringent?
- What effect do climate targets have on DFIs investment strategies?

1.4 Research Structure

Figure 1 illustrates the structure of this research. The research starts with the presentation of the area of interest, why it is relevant, and the problem statement, which provides the foundation of the research question. The research thereafter moves onto its methodology section, which provides an insight into the considerations related to the adopted framework and approaches, as well as the limitations for this research. This is followed by the conceptual and theoretical framework, which outlines the essential concepts and theories applied. The objective with conceptual framework is to provide the reader of this thesis with a necessary understanding of some of the most fundamental concepts, which plays a significant role throughout the whole research. The literature review emphasizes on what previously has been written on the topic of climate change and development finance institutions' role investing in combating climate change, with the main objective of summarizing some of the most significant literature on the topic. This leads to a case study of Norfund's CE department, where the internal situation and the external environment eventually will be summarized in a SWOT matrix. The subsequent section will feature a discussion regarding the findings and its relevance for answering the sub-questions and research question. The final two sections conclude on the research, the finding, and answer the research question for thereafter discussing the possibility of generalizations, further research and complications affecting the research.

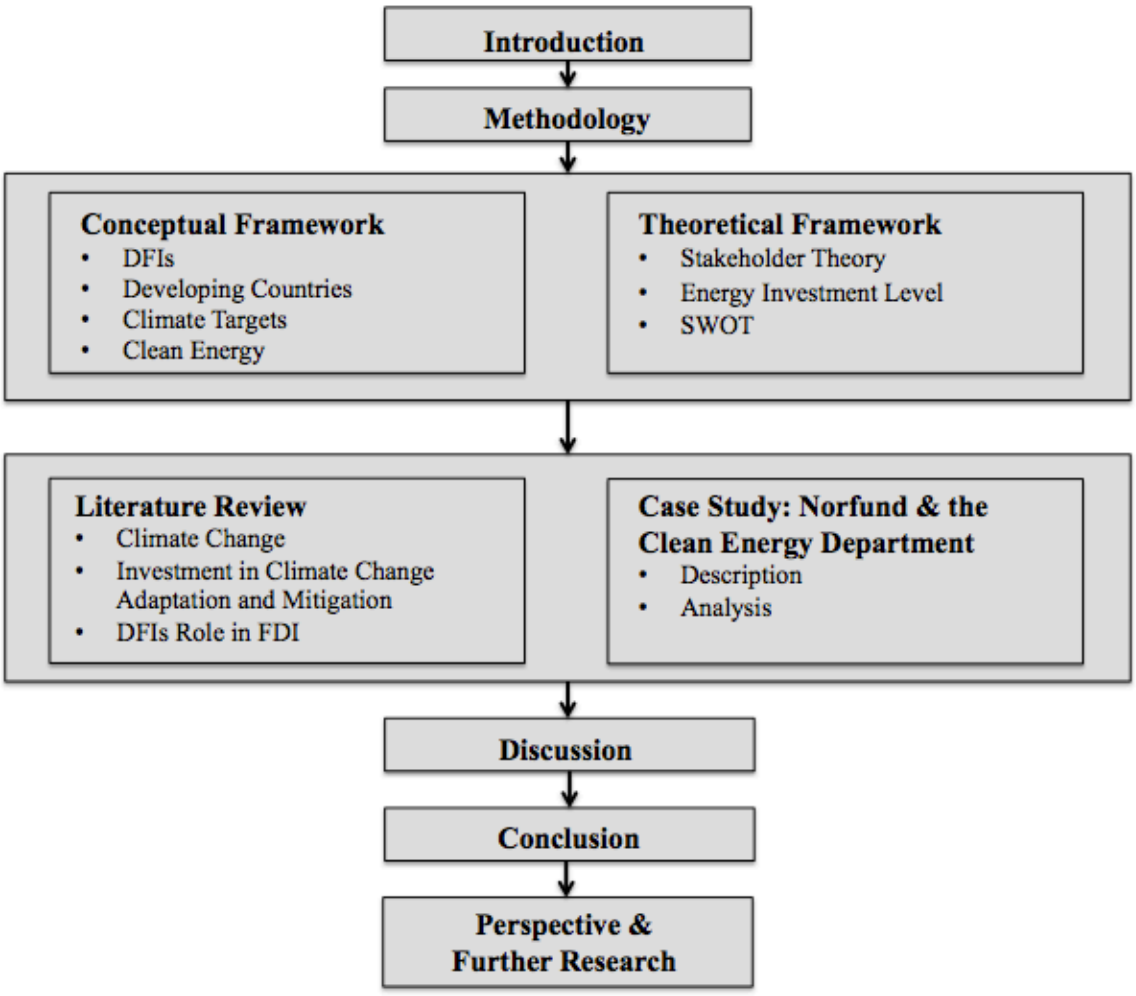


Figure 1: Structure of Paper (created by authors)

2. Methodology

The following methodology section will explain the methods applied in the research. The section will include a discussion of research philosophy, research approach and strategy based on Saunders, Lewis and Thornhill's (2009). Subsequently, the section will contain an explanation of the data collected and rationale for the collection.

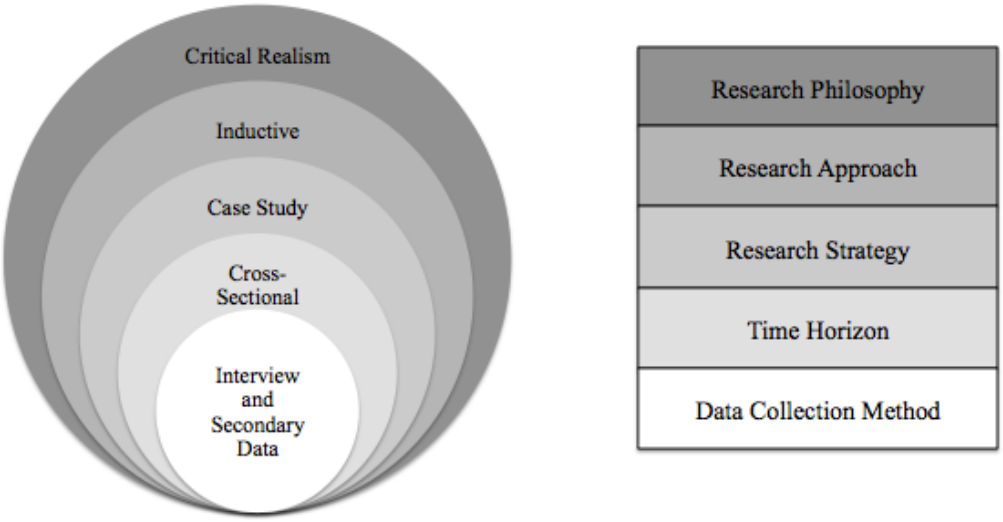


Figure 2: Methodology Overview (created by authors)

2.1 Research Philosophy

Research philosophy relates to the development of knowledge and the nature of that knowledge. The research philosophy contains essential assumptions about the way the world is viewed. According to Johnson & Clark (2006), business and management researchers need to be aware of the philosophical commitments made through the choice of research strategy because it has a significant impact on what and how we are investigating. The adopted philosophy will be influenced by practical considerations and is mainly influenced by our particular view of the relationship between knowledge and the process by which it is developed. Johnson & Clark (2006) argue that the important issues are not whether the research should be philosophically knowledgeable, but how well the researcher can reflect upon their philosophical choices and defend them in relation to alternatives.

The paper researches how climate targets could impact DFIs investment strategies. If the research were to reflect the philosophy of positivism, it would most likely adopt the stance of the natural scientist, working with an observable social reality, where the end product of the research can be law-like generalized. By this philosophy, the only phenomenon that can be observed can lead to the production of credible data.

For a positivist, will a hypothesis most likely play a significant role in the research as it will be tested to be confirmed or refuted, leading to further development of the theories (Saunders et al., 2009). The developed hypotheses will, after that, lead to a gathering of facts to provide the basis for subsequent hypothesis testing (Saunders et al., 2009). Positivism researchers will, therefore, be concerned with these facts rather than the impressions, as the facts are consistent with the notion of observable social reality (Saunders et al., 2009). Another important component when applying the positivist approach is that the research is undertaken in a "value-free" way. A positivist would claim that the researcher is independent and does not affect nor is affected by the subject of research (Saunders et al., 2009). On that note, does it imply that, we as researchers have interacted in the field of research and to create a preunderstanding of the topic, which can have affected the results. As climate change is continuously evolving and its effects on investment strategies are not theorized, there is not a possibility for a law-like generalization of the research. Furthermore, as DFIs have a strong social mandate, the need to understand the difference between humans as social actors is also required.

Arguing that the social world is too complex to be defined by “laws” is often associated with interpretivism as the development of the interpretivism philosophy is based on a critique of positivism (Saunders et al., 2009). Interpretivism advocates that it is essential for the researcher to understand the differences between people as social actors and that the world is lost if such complexity is reduced to law-like generalizations (Saunders et al., 2009). An essential component of the interpretivism philosophy is that the researcher has to adopt an empathetic stance, as it allows the researcher to enter into the participant’s social world and understand their point of view. This can be challenging, as it requires the researcher to enter the social world of the research subject to view the world from their point of view. As

DFIs invest on an international level, going in-depth into each social actor being affected by climate change and DFIs investment is not possible.

The research approach has tendencies of critical realism as the research investigates hidden structures, collective thoughts and actions. Critical realism arose from the "paradigm wars" between positivism and interpretivism in the 1980s (Denzin & Lincoln, 2011 in Fletcher, 2016). That is why critical realism incorporates parts of both philosophies to give a detailed account of epistemology and ontology (Brown, Fleetwood & Roberts, 2002 in Fletcher, 2016). In other words, the research studies an observable social reality with a critical eye.

To answer the research question, an understanding of complex themes, such as climate change and different investment markets, is needed. The underlying mechanisms driving both climate change and financial markets are often invisible. Hence, the opportunities and consequences of these social situations are unobservable for humans that do not possess a certain level of knowledge on the themes. Critical realism believes that reality exists independently of human conception and that certain events are unobservable because only individuals who understand the structures that generate these events will be able to understand (Saunders et al., 2009). It is, therefore, necessary to follow a research approach that focuses on empirical data and secondary data from experts within the field as it enables the researcher to distinguish between the event and what causes it.

According to critical realism, it is the researcher that creates the conditions necessary for the observable event, but the results are caused by underlying laws and unobservable events. Critical realists argue that experiences are sensations, the images of things in the real world, and not the thing directly (Saunders et al., 2009). Critical realism explains how senses can deceive the researcher and claims there are two steps to experiencing the world. Firstly, it is the thing itself and the sensations it conveys. Secondly, is the mental processing of what goes on and that the sensations meet the senses. In critical realism, the importance of the multi-level study is recognized as each of these levels can change the researcher's understanding of what is being studied (Saunders et al., 2009).

There are many different views and approaches to critical realism, one of the most detailed and comprehensive is provided by Sayer (1992), as his version demonstrates how critical realism can provide a philosophical justification and a guide for case research. Sayer (1992) outlines two different research designs, the intensive and the extensive. The intensive research design is, according to Sayer (1992), used to obtain in-depth knowledge of a specific phenomenon, while the extensive research design can be applied to establish an overview. These designs can be supplemented by a third, the explorative design (Jeppesen, 2005). The explorative design aims to establish an understanding of the investigated area according to the parties involved. Yin (2007) argues that *"different methods may sit in parallel, potentially leading to multiple studies, and not the desired 'mixing' of methods implicit in mixed methods research"* Therefore, will this research design seek to meet the standards of integration proposed by Yin (2007).

One issue posed by Sayer's (1992) work is, however, generalization based on a case study. Yin (1989) argues, on the other hand that it is possible to generalize on the basis of a single case study. Therefore, as this paper seeks to investigate how DFIs can modify their energy investment strategies considering stringent climate target based on a case study of Norfund, through a critical realist approach, Sayer's (1992) and other critical realist skepticism need to be taking into account. Hence, is the research question developed to identify a research phenomenon of interest, in terms of a discernible event and what causes them to happen. It provides a possible explanation of how and why climate change affects DFIs investments based on a case study.

2.2 Research Approach and Strategy

How the research makes use of theory determines if an inductive or deductive approach has been obtained (Saunders et al., 2009). The deductive approach involves the development of a theory, which is subsequently tested (Saunders et al., 2009, p.126). This paper does, however, follow an inductive approach, as it seeks to explore the collected data and subsequently relate it to the literature. The inductive approach rose as social science researchers began to wary deduction. Researchers were critical of the approach that enabled cause-effect link between variables without an understanding of how humans interpreted the social world (Saunders et al., 2009, p.126). Therefore, this paper is following an inductive approach

concerned with building a theory and incorporates an understanding of the way humans interpret their social world (Saunders et al., 2009, p.126). Our research does have a defined purpose with the research question and its objectives. Still, by adopting the inductive approach, we do not start with any predetermined theories or conceptual frameworks. According to (Saunders et al., 2009) will the research need a competent level of knowledge on the subject to take on the inductive approach. It is, however, impossible to review all the literature on the subject. Hence the purpose of the literature review. The objective of the literature review is not to summary all the literature but instead review the most significant literature relative to our research question.

Since new information appeared during the research process leading to changes in the research theory and analysis an inductive approach was adopted. This research aims at exploring how can DFIs modify their energy investment strategies considering stringent climate targets. According to (Saunders et al., 2009), when exploring, you have to be willing to change directions based on new data. Therefore, the ability to permit alternative explanation was crucial and the inductive approach allows this (Saunders et al., 2009, p.126). The research question still defines the purpose and objective of the process; however, it did not predetermine the theories used at a later stage (Saunders et al., 2009, p.61). Furthermore, does the research have tendencies of an inductive approach as it started broad and became gradually narrower (Saunders et al., 2009).

The paper seeks to answer the research question rather than employing a particular method. Based research question, it can be argued that, the most appropriate method is critical realism with an inductive approach, as the application of our method is not for the sake of its application, but instead it is applied with the specific objective of answering the research question.

This paper follows an exploratory process and Robson (2002, referred to in Saunders et al., 2009) defines an exploratory study as means of finding out *"what is happening; to seek new insights; to ask questions and to assess phenomena in a new light*" (p. 139), which is useful to clarify our understanding of the problem. The research can be viewed as exploratory in the technique for interviews, thus should the interviews correspond with our

research question as the semi-structured allows us to uncover the respondent's motivations and beliefs on the topic (Saunders et al., 2009,). Furthermore, does it allow the interviewee to go off-script, which were particularly beneficial to us when discussing opportunities and challenges. This enabled the possibility of gaining new knowledge while maintaining our focus on the planned topics. The design of our research is also exploratory in its case study, as Flyvbjerg (2006) argues that a case study is the most advanced form of learning as the researchers actively engage in the surroundings where the phenomenon is manifested. We therefore argue through Flyvbjerg (2006) that our exploratory case has its validity in the context specific knowledge we gained through the case of Norfund's CE department as Flyvbjerg (2006) describes the case itself is the result. To be able to draw the most essential information out of our analysis, we use the SWOT framework as a summarizing tool in the exploratory process. This is applied to get more comprehensive understanding of the internal and external factors, as primary objective of the SWOT analysis is to gain awareness of the factors involved in making a business decision similar to restructuring investment strategies.

As the paper have been exploratory in its nature it has also been affected of some limitations, such as sample size investigated and generalisation based on a single case study, which will be discussed in the limitation section below. As stated earlier, the research started with a broad perspective, which has narrowed over time. There is no known research on how DFIs should adapt their investment mandate in order to take climate change into account. This highlights the importance of exploring the topic. Furthermore, exploratory research and analysis are flexible and adaptable to change (Saunders et al., 2009, p.140), which is a necessary element to follow as new data may change our research process.

The paper will contain both quantitative and qualitative analysis. Quantitative data technique uses numerical data and qualitative is mostly describes as non-numerical data, such as interviews (Saunders et al., 2009). By following the philosophy of a critical realist, it is essential to collect quantitative data, which can give a numerical view of the situation. However, the quantitative data needs to be assessed with qualitative data to make sure any underlying factors are considered. Therefore, the paper will use quantitative data in the form of numerical statistics from databases and reports and quantitative data in the form of in-depth interviews, academic, articles and books. The data will be analysed using a mixed-

model research approach. Saunders et al. (2009) describe mixed-model research as a combination of quantitative and qualitative data collection techniques and analysis procedures (p.153). Since the paper follows a critical realist view, both the quantitative and qualitative data has been quantized. Tashakkori and Teddlie (2003) argues that multiple methods can provide a better opportunity to answer the research question as it will allow us to better evaluate the extent to which our research can be trusted. Another advantage is that different methods can used to answer different perspective, for example can the qualitative or quantitative data be used at an exploratory stage to get a sentiment for the key issues before addressing them (Saunders et al., 2009). Bryman (2006) nevertheless, argues that researchers should be careful when applying multiple methods as the potential of unanticipated outcome is multiplied. We do however argue that since all different techniques have different effects, it is favourable to use different methods to cancel out the 'method effect' (Saunders et al., 2009).

2.3 Case Study

A case study has been applied to answer the research question. Bent Flyvbjerg (2006) defines a case study as a *"detailed examination of a single example"* (Flyvbjerg, 2006, p.2). The research question will be answered by using Norfund and its CE department as an example of how stringent climate targets modify DFIs energy investment strategies. As the investment strategies for Norfund are determined by the investment environment, which may change over time, and due to the limited time frame of the research process, conducting a cross-sectional study was most applicable. To be able to answer the research question in the most adequate way, it is determined that a single case study of Norfund's CE department would be the most effective. We further argue that it is justifiable to have a single case study, as DFIs have similar mandates and strategies when investing in developing countries. The results found when examining Norfund would thus be applicable for other DFIs as well. We consider Norfund be a valid case study as they are members of EDFI and therefore share the same investment criteria as the other members. Norfund is, therefore, a valid representative when investigating DFIs through a single case study. Furthermore, was Norfund chosen due to their expertise within clean energy technologies, as the energy sector is their primary focus. Therefore, as Norfund is one of the few DFIs with more climate-focus it seems appropriate to use them a case study in relation to our research question.

Yin (1994) argues that a case study is particularly applicable to answer a "how" research questions (Hyde, 2000, p.85), as it *"investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used"* (Yin, 1994, p.3; Hyde, 2000, p. 83). This is further supported by (Flyvbjerg, 2006) that describes a case study as the case story itself is the result. The paper's contemporary phenomenon is *"investment in developing countries considering stringent climate targets,"* using a mixed-method approach, which gives the paper multiple sources of evidence.

Considering Flyvbjerg (2006), the research has its validity in the context of specific knowledge generated in the exploratory case of Norfund and the CE department. Yin (2003) argues that a single case can be used to investigate a critical, extreme, or unique case. Yin (2003) does, however, also mention that the rationale for using multiple cases is to establish whether the finding of the first case occurs in other cases and that multiple case studies may be preferable to a single case. Another difference is that the researcher can analyze the collected data within each situation and across situations. Enabling the multiple case study to either argue for or against the results in the study and, in that way, clarify whether the finding is valuable (Yin, 2003).

Multiple case studies can, however, be expensive and very time consuming (Baxter and Jack, 2008), and according to Siggelkow (2007), the existence of a phenomenon can opulently be described through a single case study. Dyer and Wilkins (1991) share this vision as they argue that single case studies are better than multiple cases as a single case study produces a better theory, gives the writer more observation time, and ensure that the researcher is confident in their representativeness (Gerring, 2004). A single case study will, therefore, enable the researcher to question old theoretical relationships and explore new ones, allowing the researcher to get a deeper understanding of the subject Dyer and Wilkins (1991).

Having a single case study is often criticized for lack of external validity. External validity is the ability to generalize the research result. This means that the findings are equally valid for other projects or companies not represented in the single case study. However, Flyvbjerg (2006), argues that all human knowledge begins with specific experience of a case and states

that *"force of example is underestimated*" (p.12). Furthermore, does he state that "*one can often generalize on the basis of a single case, and the case study may be central to scientific development via generalization as supplement or alternative to other methods"* (Flyvbjerg, 2006, p.12). Generalizability is significant in critical realism, as it seeks to utilize the detailed causal explanation of the forces affecting a situation and see if similar forces create different or comparable situations (Wynn & Williams, 2012). Hence, the case study will answer the research question with the "force of example".

2.4 Data Collection

The data used in this project consist of both primary and secondary data to answer the research question. The primary data was collected in the form of semi-structured interviews. Primary data is described as data collected by the researchers to answer the specific research question, whereas the secondary data consists of data collected by other researchers for different research. The following section will describe the characteristics, advantages and limitations of the collected data and how these methods help to answer our research question.

2.4.1 Primary Data

The primary data consist of semi-structured interviews conducted to provide different perspectives on the research question. Semi-structured interviews, which are "non-standardized" and are often referred to as "qualitative research interviews". These interviews intend to get the responsive to talk in their terms and go beyond what can be learned through focus groups or scripted protocols. These interviews serve as a tool to clarify and triangulate obtained through other means (Saunders et al., 2009).

2.4.1.1 Semi-structured interview

To get a deeper understanding of DFI's mandate, strategy and structure, semi-structured interviews with multiple European DFIs were conducted. By interviewing multiple European DFIs an overview of similarities and differences in their operations was found. Inputs from multiple sources are essential to increase the validity and reliability of the empirical data. To narrow the search for interviewees, this paper focuses solely on DFIs that are members of EDFI. Even though there are many DFIs outside of Europe, the political and institutional

structures in each European country are more aligned and therefore, will the European DFIs would give a better spectrum of collected data to make the empirical data valid. As the paper strives to explore how stringent climate targets modify DFIs energy investment strategies the interviews needed to give the freedom to explore. Structured interviews follow strict procedures (Saunders et al., 2009), which would limit this paper's ability to explore (Saunders et al., 2009), However, as the authors of this paper are not professional interviewers, it was believed that having prepared a question guide (Appendix 1) would increase the reliability of the empirical data. Hence, semi-structured interviews would benefit the research approach the most.

According to Saunders et al. (2009), a semi-structured interviewing method is applicable when conducting an exploratory or explanatory study. Semi-structured interviews are usually operated with a list of themes or questions that the researcher wants to cover, with the opportunity to ask additional questions to explore further. Hence, this interview method is a good tool to investigate what is happening and seek new insight (Saunders et al., 2009), which is viewed as a necessity to answer the research question.

Table 1 shows the interviews that were conducted:

Interviewee	Organization	Role in Research	Date	Location	Length
Karoline Teien Blystad	Norfund	Case project	20.01.2020	Norfund Headquarters, Oslo, Norway	47 min
Karoline Teien Blystad	Norfund	Case project	09.03.2020	Norfund Headquarters, Oslo, Norway	35 min
Gunilla Nilsson	Swedfund	Industry Professional	09.03.2020	By telephone	25 min
Jacob Klingemann	IFU	Industry Professional	11.03.2020	By telephone	34 min
Richard Charlton	CDC	Industry Professional	12.03.2020	By telephone	21 min
Mark Davis	Norfund	Case project/Industry Professional	19.03.2020	By mail	-
Birgit Edlefsen	FMO	Industry Professional	20.03.2020	By mail	-
Stephan Diefenthal	DEG	Industry Professional	24.03.2020	By mail	-

Table 1: List of Interviewees (Created by Authors)

The interviews with Norfund's strategy department were conducted face-to-face at its headquarters in Oslo at different times during the research process. The third interview with the CE department was supposed to be face-to-face as well, however, due to COVID-19 this was not possible. As stated, the interview method chosen in this paper is semi-structured. However, the first interview conducted with Norfund was unstructured, since we were early in the writing process and needed to narrow down the problem area. Having the freedom to explore and learn about Norfund gave us valuable insight into what is believed to be the issue regarding climate change and investments. Based on this insight, we were able to construct a question guide (Appendix 1), which was used in the other interviews.

Having regular contact with Norfund, through mail and phone calls helped increased the validity and reliability of the empirical data collected. It did this by decreasing uncertainties or misinterpretation of either the questions we asked or the answer Norfund gave, as both parties could send an email or call and clear up misunderstandings. The questions in every interview were open-ended since data collected this way became more reflected and unbiased.

The interviewees were selected based on specific selection criteria to ensure the empirical data collected would be valid and reliable. The criteria were:

1. Work for a European DFI
2. Minimum 5 years' work experience
3. Work experience in investment in developing countries and/or infrastructure investments

The criteria were shaped based on the empirical data necessary to answer the research question. The interviewee needed to work for a European DFI as this paper researched DFIs position in climate change investments. The interviewee needed extensive work experience, and specifically, work experience in the areas this paper is researching in order to give reliable and valid empirical data. Due to the geographical distance between the interviewee and us, to conduct interviews over the phone was seen as most efficient. Every interview was planned as in-depth phone interviews. However, due to COVID-19, the interviews planned during the lock-down period were not able to be conducted as planned. This might influence the findings of this research, as additional information could have led to a different perspective, brought additional dimensions to the findings, or led to a different result.

The interview participants were approached by a personal email explaining the research topic and the intended use of their answer. The interviewees either accepted the request themselves or forwarded it to a more suitable colleague, thereby increasing the quality of the empirical data, as we interviewed to most suitable individual from each DFI. The email enquiry to plan the interview, we stated the theme of the interview, the purpose of the information we wanted to collect and the question guide (Appendix 1). By doing so, the interviewee could prepare for the interview, and we would receive information of higher quality and be able to minimize the response bias. It was stated that the interview and the

research paper was to be confidential if the interviewee wanted it to be so. Some of the interviewees wanted additional information of our collaboration with Norfund, but no participant had the desire to remain confidential.

The questions guide (Appendix 1) was created before conducting the interviews to overcome data quality issues often associated with semi-structured interviews (Saunders et al., 2009). By preparing questions prior, the interviewer bias was minimized as we spend time forming questions that would not impose personal belief or frame of reference. The question guide sent to the participants was not too long in order to encourage respondents to take part in the process. By conducting the interviews via phone, we created a flexible and less time-consuming process. During the interview, additional questions were asked if interesting topics came up that we wanted to explore, or if an answer from the interviewee needed more context.

Every interview was transcribed in its original language and has been placed in the appendices for full disclosure. It was important to transcribe every interview to become familiar with the data collected and to have the opportunity to categorize the data.

2.4.1.2. Thematic Coding Analysis

By following a critical realist philosophy, the interviews were coded using the thematic analysis method to quantify the findings. A thematic coding analysis is the search for important themes that will be useful to answer the research question (Daly, Kellerhear & Gliksman, 1997 in Fereday & Muir-Cochrane, 2006). To do so, the researcher will find patterns in the empirical data, subsequently categorizing them into common themes (Fereday & Muir-Cochrane, 2006). As the interviews conducted were semi-structured, the interviewees were asked similar questions. Hence, categorizing the answers in themes was logical.

First, we found important sections of the interview transcripts and these were highlighted to give a visual overview. Secondly, the highlighted sections were given a preliminary code describing the content of the section. Thirdly, the codes were divided into different themes, which showed the correlation or differences of the codes created. Fourthly, the themes and

preliminary codes were reviewed and refined in order to specify it as much as possible. Finally, table 2 was created to give a visual overview of the thematic analysis.

Investment Strategies		Investment Market	
Current	**Future**	**Challenges**	**Opportunities**
Development Focus	Development Focus Climate Focus Clean Energy Investment	Find Bankable Investments High Risk	Capital Availability High Growth Rate Technology Innovation

Table 2: Thematic Analysis of Empirical Data (Created by Authors)

The two overall themes found in the thematic analysis were Investment Strategies and Investment Market. The Investment Strategies theme was divided into two sections: current and future strategies. Overall, the empirical data in the interview highlighted a development focus in the DFIs current investment strategies. However, future investment strategies were more aimed at combining development and climate focus by increasing investments in the clean energy sector. The Investment Market group was also divided into two sections: challenges and opportunities. The challenges of the investment markets are finding bankable [1] investment projects at acceptable risk levels. The opportunities of the investment markets are the funds available for investing in the clean energy sector, the high growth rates and technological innovation.

2.4.1.3. Interviewee Description

The different interviewees will be presented here with an outline of why they are relevant and reliable interview subject for the research project. The interviews with Norfund's representatives were conducted to receive empirical data on the case project. The interviews with industry professionals from other European DFIs were conducted to get empirical data on how other DFIs are tackling the stringent climate targets, their view on investment in developing countries and the clean energy sector.

[1] Bankable: a project that has sufficient collateral, future cashflow and high probability of success

2.4.1.3.1. Interview for Case Project

Karoline Teien Blystad, Senior Macro- and Development Economist (Strategy and Communication) at Norfund [2]

As the research seeks to understand how Norfund should invest in view of the stringent climate targets, it was important to have the opportunity to gather a lot of information directly from the company. Furthermore, since the research follows an inductive path, new information appeared continuously that changed the research process. Hence, to best achieve a high level of validity and reliability in the empirical data collected on Norfund, there had to be regular contact with the company. Karoline Teien Blystad was the contact person at Norfund who helped the research uphold new and accurate data throughout the research process. She is the Senior Macro- and Development Economist in the Strategy and Communication department and has been working at Norfund for many years. This fulfilled the selection criteria. She was contacted by email when additional information was needed, in addition to two interviews at Norfund's headquarters.

Mark Davis, Executive Vice President (Clean Energy) at Norfund [3]

The research specifies the need for clean energy investment; hence having an interview with Norfund's CE department was crucial to receiving empirical data on this matter. An e-mail interview was conducted with the Executive Vice President of the CE department, Mark Davis. As stated, this was supposed to be an in-depth interview, but due to COVID-19 this was not possible. However, there was regular contact via e-mail, which helped collect new and accurate data. As he has worked extensively with clean energy investments in developing countries for many years, the empirical data collected during the interview is both reliable and valid for the case project and the overall research theme. His immense experience also fulfilled the selection criteria.

[2] Appendix 2 & 3
[3] Appendix 7

2.4.1.3.2. Interview with Industry Professionals

As the research seeks to find out how DFIs should modify its clean energy investment strategies, more information on how other DFIs are investing today and how their strategies look for the future was needed. Hence, empirical data was needed within three areas:

- How DFIs operate
- The clean energy sector
- How to invest in developing countries.

Therefore, the interviews with different experts from other DFIs provided empirical data on all three areas, as they work at DFIs and with clean energy and/or investment in developing countries. As none of the DFIs have publicly discussed a more climate-focused strategy for the future, they will be viewed as individual industry professionals rather than representing the relevant DFI.

Gunilla Nilsson, Senior Investment Manager (Energy) at Swedfund [4]

A semi-structured interview was conducted over the phone with the Senior Investment Manager at the Swedish Development Finance Institution's (Swedfund) energy department, Gunilla Nilsson. The department focuses on investment in clean energy and conventional power. She has worked at Swedfund since 2008 and has become a specialist within the sectors of energy and financial institutions (Swedfund, n.d.). Hence, she was interviewed to get a better understanding of the energy sector and Swedfund as a DFI. Swedfund is smaller than Norfund in terms of size and investment level, but the Swedish DFI invests on the same commercial basis as Norfund (Appendix 4). Furthermore, clean energy is one of its three main sectors and consists of 80 per cent of the investment portfolio. Therefore, it was important for the research to understand how another smaller DFI handles the threat from climate change today and its future plans. She fulfilled the selection criteria because of her many years of experience in the sector.

Jacob Klingemann, Investment Director at IFU [5]

Another interview was conducted with Jacob Klingemann, the Investment Director at the Danish DFI called Investeringsfonden for Utviklingslande (IFU). IFU has a different financial

[4] Appendix 4
[5] Appendix 5

process than Norfund, as it needs to attract funding from other private investors to conduct investments in developing countries. Their investments are usually financed with 40 per cent of its own capital and 60 per cent through venture fund capital (Appendix 5). Hence, it was interesting to understand how another Scandinavian DFI is planning its future investment strategy when it is highly reliant on private capital. Jacob Klingemann fulfilled the selection criteria as he has been with IFU since 2009 and has, therefore, more than a decade of expert knowledge.

Richard Charlton, Investment Director (Infrastructure Equity) at CDC [6]

An interview with Richard Charlton was conducted, as he is the Investment Director of the Infrastructure Equity department and part of Commonwealth Development Corporation (CDC) Africa and South Asia investment team. The department focuses on the energy, transportation, telecoms, and urban infrastructure sectors. CDC was the first DFI created and is today still one of the largest and most influential DFI worldwide (CDC Group, n.d.). Therefore, receiving insight into the company and its energy department was interesting as it usually leads to the forefront of change for DFIs investment strategies. CDC is also one of the few DFIs who have publicly stated that they will take on a more climate-focused strategy in the future, however, exactly how is not decided yet. Richard Charlton fulfilled the selection criteria as he has been working within the infrastructure sector for a long time and has been with CDC since 2013.

Birgit Edlefsen, Senior Investment Officer (Energy) at FMO [7]

Another large European DFI is the Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden (FMO). Hence, it was preferable to collect empirical data from an industry professional working there as well. An interview via email was conducted with the Senior Investment Officer at FMO's Energy department. It was supposed to be an interview over the phone. However, due to COVID-19, it was not possible for her to be available for a verbal conversion. Birgit Edlefsen fulfilled the selection criteria, as she has been a part of the team for more than 10 years, focusing on sourcing, structuring and monitoring power projects in Africa. This highlights her knowledge within the area.

[6] Appendix 6
[7] Appendix 8

Stephan Diefenthal, Vice President at DEG [8]

The last interview was conducted via email with the Vice President of Deutsche Investition- und Entrwicklungsgesellschaft (DEG), Stephan Diefenthal. DEG is the German DFI and also one of the largest in the world, having a portfolio consisting of 720 investments and 9 billion euros invested in total (DEG Invest, n.d.). This was also supposed to be a phone interview, but due to the difficult circumstances because of COVID-19, he did not have time. By being the Vice President of one of the worlds' largest DFIs, he fulfilled the selection criteria.

2.4.2 Secondary Data

In addition to the primary data collected comes the secondary data. Secondary data consists of information that has already been collected and structured in previous research, both internally in Norfund and from market research. The secondary data consists of academic articles, reports, information from websites and books. Essential secondary sources were located ahead of analyzing the particular subject as it provides a possibility of understanding the given subject before actively initiating the research (Saunders et al., 2009).

The secondary data include both quantitative and qualitative data, which can be defined as compiled data that have gone through some process and received some form of selection or summarizing. The combination of the existing literature and empirical data aims to complement each other to obtain a more comprehensive understanding of the subject. Furthermore, the purpose of this type of information is to gain a better understanding of the drivers that are already established related to climate change effects but also a focal point for the analysis of DFIs. The secondary data selected is mostly from larger organizations as we wanted to get the most influential reports on the subject to improve the liability. Furthermore, is a portion of the quantitative data from official financial report enabling us to get a more comprehensive understanding of the field. Therefore, is the secondary data essential to us as researchers to get a better understanding of the area and its components along with it provides a better opportunity to get more comprehensive primary data. There are, however, some issues of using secondary data, which need to be accounted for. The

[8] Appendix 9

secondary data may have been collected for another purpose that varies from the objective of this research. Furthermore, it is known that the initial purpose may affect how the data is presented, which might consequently make the data inappropriate (Saunders et al., 2009)

The three books, *"Ecology of Commerce*" by Paul Hawken (1993), *"Banking for a Better World"* by Kleiterp and Wiersma (2017) and *"Climate Change and Developing Countries"* by Ravindranath and Sathaye (2003), have been essential as sources of secondary data, the books have given inspiration to overall research objective along with the academic framework. In addition, reports from well-known intuitions and organizations were included to deliver necessary information on climate change and the effects of it. The reports with the most significant influence on the project are *"Emissions Gap Report 2019"*, by United Nations Environment Programme, (2019), *"The heat is on"* by Doyle, (2019), and "*Climate Change 2014: Impacts, Adaption and Vulnerability*" by IPCC, (2015).

Furthermore, reports from intergovernmental economic organizations such as The World Bank and OECD have contributed with statistical data on the impact of climate change. As Norfund is a public company, annual reports were obtained from Norfund's website. In addition, Norfund has supplied our research with internal non-public information, in the form of PowerPoints (Appendix 13) and reports.

Even though the secondary data may have been collected for another purpose that might affect how the data is presented, which should be encountered for in the research (Saunders et al., 2009) are all the sources applied, perceived to be reliable and trustworthy, in relation to our research. This is because most sources are international organizations with substantial operations in multiple countries. Hence, these organizations have profound knowledge about the topic at hand (Saunders et al., 2009). In relation to our research, we understand that the secondary data have been collected for another purpose, which is why we use the secondary data to get a better understanding of the topics in which the data was original collected. For example, do we use IPCC reports on climate change to improve our understanding and describe the topic in which they are experts in. Furthermore, do we examine in which field

each organization is considered to be an expert and thereby only use their expertise on these specific subjects.

To provide an overview and insight on how and where the secondary data is used, table 3 was created.

	Theoretical Framework	Conceptual Framework	Case Study
Academic Books and Papers	X	X	
Financial and Strategic Reports		X	X
Company Webpages			X
Newsletters and -articles			X

Table 3: Overview of Secondary Data (created by authors)

In conclusion, secondary data is used to provide two main benefits. Firstly, it illustrated the knowledge already generated on the subject. Secondly, it enables us to understand the potential factors deducted from the primary sources more concretely.

2.5 Limitations

2.5.1. Theme

Even though climate change and its effect on the world is broadly researched and discussed, the extends of its consequences are not obvious today. Even though, the magnitude of the consequences of climate change are unsure, general trends such as increasing global temperatures are a scientific fact. Therefore, will this research focus on trends and proven impacts and not explicitly state what will happen over the coming decades as it cannot be precise.

The paper follows scientific research to give the best possible picture of the situation. However, issues discussed here may evolve and change tomorrow, which influences the findings in this paper, as new research or agreement could make the results insignificant. Climate change is a complex issue and reaching climate targets can only be done with dedicated involvement from every country. Seen in the big picture, DFIs take a small part in helping to reach the targets. Combining the uncertainties of the effect of climate change and DFI's limited contribution to reaching the climate targets increases the uncertainty that they can help reach the targets at all. The finding of this research will furthermore only be able to describe bilateral DFIs, as the research only investigate bilateral DFIs under a collective term. Therefore, it known that our findings might have been different if we were to examine a multilateral DFI.

Furthermore, there has been limited research on DFI's involvement in climate change mitigation and adaptation. The topic is highly relevant for DFIs today and they are starting to create strategic plans to become more climate-focused. However, these questions have only recently been set on the respective agendas and are as such not yet fully implemented. Hence, the research paper might have presented more specific results, had it been done in a year or two.

2.5.2. Method

The primary data were mostly collected under the looming threat of COVID-19. Many interviews were not possible to conduct physically, as they were planned to be conducted after the lock-down occurred. The amount of empirical data collected was limited due to this, as many of the interviewees did not have the time or the ability to give more in-depth answers or give follow-up interviews. As the research topic is very new, the paper relied on empirical data to be able to answer the research question. Even though sufficient data have been collected, a broader range could have increased validity and reliability.

Due to limited time, a cross-sectional analysis was conducted. However, as it is an on-going topic that gives new information as it evolves, a longitudinal analysis method might have given a more in-depth analysis. This is because longitudinal analysis researches specific people or events over an extended period of time.

As the primary data were collected through interviews, we recognize that the interviewer and the interviewee engage in an interactive process to generate data for the research agenda. Furthermore, we recognize that these interactions are critically influenced by the research agenda and that the outcomes of these interviews are a result of the interaction between social structures, mechanisms and human agency. Hence, the research is influenced by the interviewees, even though a critical realist philosophy was applied when the interviews were coded. This implies that we seek to utilize the interviews and other data provided to the interpretations of informants to analyze the social context, constraints and resources within which those informants act.

Within the limitation of this research, critics could argue that triangulation methods could have been applied to the collection of primary data to strengthen the trustworthiness of our findings. Based on the situation with COVID-19 limiting the possibility of doing triangulation, we argue for triangulation methods to be insignificance and value the dimension perspective from our primary data. This argumentation is based on the uncertainties with triangulation as it can be argued that it would not produce a 'higher' quality of research and, therefore, is not limiting our research.

Furthermore, do we recognize our bias as some background information on Norfund, DFIs, and climate change effects on DFIs were provided by Norfund. To decrease our bias, we prioritized interviews with other DFIs to ensure that our findings were not tacit knowledge of Norfund.

2.5.3. Theory

There is limited prior research on the topic and, therefore, no specific theories created to analyze DFI's impact on climate change mitigation and adaptation. Hence, the paper uses theories from other academic fields that are believed to be relevant. By using theories from different academic fields, many different theories could have been used that might have given different answers. Moreover, as there is no textbook answer to the research question, it is not possible for us to know for certain that the theories we have used are the most relevant ones.

3. Conceptual Framework

The purpose of the following section is to define and enlighten the reader on core concepts that will be used throughout the research. The section will begin with a general description of the development finance institutions (DFIs), their purpose, and internal activities.

This will lead to a more comprehensive examination of developing countries, what defines them and terms associated with it. Subsequently leading to a description and definition of developing countries, followed by a section about the interlink between the climate targets, sustainable development, mitigation and adaptation. This will consequently lead to an investigation of current clean energy investments.

The last part of this section, main objective is to give an understanding of clean energy and the market for clean energy. This implies that the paper does not provide a complete and thorough description of the entire industry and its components. The information provided is viewed as needed to understand the subsequent analytical reasoning.

3.1 Development Finance Institutions

Development Finance Institutions (DFIs) are specialized development organizations that are mostly majority-owned by a national government (EDFI, n.d.-a). Historically, have DFIs been created by governments to promote economic growth and support social development (De Luna-Martinez, 2017). Ordinarily to provide credit and a large range of capacity-building programs (De Luna-Martinez, 2017). Despite the fact that many DFIs were created several decades ago, data have shown that several governments still see them as a relevant instrument to pursue economic goals (De Luna-Martinez, 2017). Although many of the institutions were created several decades ago, data shows that many governments around the world still see them as a relevant instrument to pursue economic goals. It is estimated that around 22% of all development financial institutions currently in operation around the world were created in the past 17 years. A further 33% were set up during the 80s and 90s – the decades in which mass privatizations took place in various parts of the world (De Luna-Martinez, 2017). DFIs seek to invest in commercially sustainable private-sector projects, both in low- and middle-income countries (Runde, 2014). They apply stringent investment criteria to create financial

sustainability, transparency, along with environmental and social accountability (*EDFI,* n.d.-a).

An institution is qualified as a DFI, if it *"(a) is a legally independent and self-sustaining financial institution, (b) pursues public policy objectives and (c) enjoys government support"* (Xu, Ren & Wu, 2019, p.13). Based on this definition, there is 539 DFIs worldwide (Xu et al., 2019).

DFIs can be bilateral or multilateral (EDFI, n.d.-a). The bilateral DFIs can either be independent institutions, such as Nederlandse Financierings-Maatchappij voor Ontwikkelingslanden (FMO), or part of a larger bilateral development bank such as DEG, which is part of the German development bank Kreditanstalt für Wiederaufbau (KfW) (EDFI, n.d.-a). Multilateral DFIs are part of international financial institutions (IFIs) that have been established by more than one country and hence are subject to international law. Their shareholders are mostly national governments but occasionally international or private institutions. For future reference, the paper refers to bilateral DFIs when using DFIs as a collective term. This report describes the general role of DFIs but has a particular focus on European DFIs.

The Association of bilateral European Development Finance Institutions (EDFI) was founded in 1992 and is currently an association of 15 European bilateral DFIs, similar to DFIs exiting in the United States and Japan. EDFI's purpose is to support members to implement their vision and inform the public and government stakeholders about their role and contribution to development (EDFI, 2016). European DFIs have, in the last decade, increased significantly in size, relevance, and in committed investments. The combined European DFI portfolio of committed investments more than tripled in the years between 2005 and 2015, which have been mostly financed by an increase in shareholders' equity (EDFI, 2016). The total committed investments by European DFIs were in 2015, €36.3 billion. Job creation, growth and private sector development are the most-cited policy goals for governments (EDFI, 2016).

DFIs contribute to positive development by co-investing in commercially sustainable private sector projects together with private companies and institutional investors. The DFIs often support and are involved in projects that would otherwise have been struggling to obtain the same financing. The DFIs often remain invested in a project for a period of five to ten years (EDFI, 2016). The DFIs track the contributions of their investments and private sector project to make development outcomes on an ongoing basis. According to EDFI (2016), the most crucial role for DFIs are: "*Job creation and skills development, the provision of valuable goods and services and tax payments in developing countries. Over time, these contributed to sustaining strong growth and improved living conditions in society that go beyond the project's direct productive activity and lifetime"* (p. 22).

3.1.1. Success Criteria

Three general success criteria guide members of EDFI: additionality, catalytic effect and project sustainability, seen in figure 3 below. EDFI (2016) states that *"investments that meet these criteria have the potential for making lasting contributions to the economic transition in developing countries."* (p. 29). Hence, the optimal outcome for DFIs in their investment projects is when all three criteria are fulfilled. The optimal outcome is the area in figure 3 where all three criteria overlap.

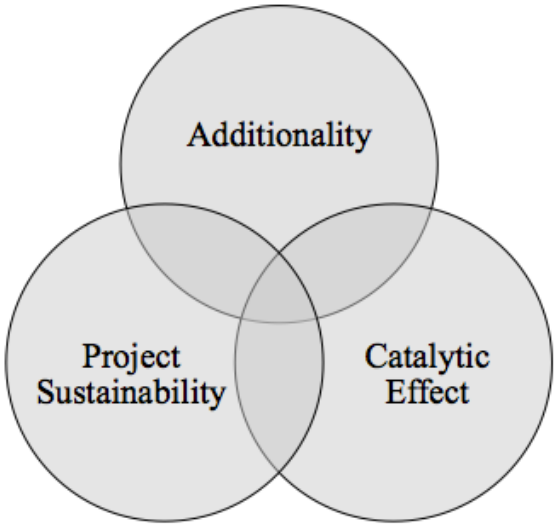


Figure 3: DFIs Success Criteria (created by authors, inspired by EDFI, n.d.-a)

The additionality criterion is determined as *"investing in underserved geographies, sectors, and segments by taking a long-term approach that permits them to engage in projects that private investors hesitate to take alone"* (Ibid, p. 30). Additionality captures the idea that investors should contribute beyond what is already available in the market and by the government (OECD, 2016). Investments with particularly high additionality can, for example, be activities in financial services that improve access to financing for micro, small- and medium-sized enterprises or climate improvement projects (EDFI, 2016, p. 30).

The second criterion is the catalytic effect, which seeks to mobilize capital from private investors by being first movers, demonstrating to other investors how to invest in projects that are associated with high risk and by sharing risk and expertise. European DFIs are often structured to operate and promote financial participation from private sector counterparts. Eight of the current 15 members of EDFI have private entities as shareholders, typically banking institutions or other private companies in the DFI's home country (EDFI, 2016, p. 31). The DFIs often seek significant participation from private counterparts as they typically take small minority equity shares in projects and are often leaving the controlling shares with the project promoters. According to EDFI (2016), DFIs play an essential role in building the private equity industry in emerging markets by providing the first-round seed funding to many new funds in these markets along with technical assistance (EDFI, 2016, p. 31).

The third criterion is project sustainability. Project sustainability mostly consists of two pillars, commercial sustainability and sustainability standards (EDFI, 2016). In addition to ongoing investment monitoring, the DFIs also track the contribution to development outcomes such as tax payments and employment to ensure both good financial and good development outcomes. EDFI standards include sharing their knowledge to seek harmonies in their responsible investment practices, and EDFI have adopted a shared set of principles for responsible financing, which focuses on "*Respect for human right and environmental sustainability […] members have also adopted harmonized environmental and social standards [..] that include due diligence, contractual and monitoring requirements"* (EDFI, 2016, p. 32). By building on shared commitments and standards, the members of EDFI can

help partners implement more responsible business practices and improve project outcomes (EDFI, 2016).

3.1.2. Geographical Focus

When discussing DFIs and their purpose, it is inevitable to assess how they decide on which countries should receive investments. Most countries and related DFIs are members of the Development Assistance Committee (DAC), a forum created by the OECD in 1961 to discuss issues connected to aid, development and poverty in developing countries (OECD, 2020). DAC provides a list, which is revised every three years, called the *DAC list of ODA recipients*. The list is designed to help measure and classify aid in all forms and not as guidance for preferential treatment (OECD, 2020). Thus, the list aims to show all countries and territories eligible to receive Official Development Assistance (ODA). The DAC list of ODA recipients for 2020 can be found in Appendix 10.

The OECD defines ODA as "*Government aid that promotes and specifically targets the economic development and welfare of developing countries."* (OECD, 2020) The definition plays a central role for most DFIs as they invest primarily in countries included in the OECD DAC definition of developing countries. Since DFIs are obliged to invest in developing countries, it is reasonable to further investigate what defines developing countries and the terms associated with it.

3.2 Developing Countries

There is no established definition of the designation of developed and developing countries. Members of the WTO announce for themselves whether they are developed or developing countries, and the definition can be challenged by other members (WTO, n.d.). There exist several classification levels that use some economic and social criteria, such as income per capita, life expectancy and literacy rates (Oplatka, 2004). A developing country can be described as a country with a less developed industrial base, according to a low Human Development Index (HDI), or a nation's Gross Domestic Product (GDP) per capita relative to other nations (Oplatka, 2004).

The definition of developing countries is, however, facing some controversies. Khokhar and Serajuddin (2015) discuss how the terms developed and developing are becoming less relevant, and they wish to phase out the description by using data aggregations for regions, and relevant index. Another way to define developing countries is the DAC list of ODA Recipients, which, as stated above, shows all countries' territories eligible to receive ODA, consists of low- and middle-income countries (LMIC) based on GNI per capita (OECD, 2020). Table 4 shows what defines a low, lower-middle and upper-middle country or territory, according to OECD. Members of G8 and the EU are excluded from the list. The list provided by the OECD also includes countries defined as least developed countries by the UN.

Category	Per Capita GNI (US$)
Low Income Countries and Territories	< = 1 005
Lower Middle Income Countries and Territories	1 006 – 3 955
Upper Middle Income Countries and Territories	3 956 – 12 235

Table 4: OECD Low- to Middle-Income based on per Capita GNI (US$) (created by authors, data retrieved from OECD, 2020)

Therefore, the term developing countries in this paper will describe countries with the following characteristics in common: low income per capita, high population growth rate, high rates of unemployment, high levels of poverty and low levels of productivity (Oplatka, 2004), which are countries officially on the DAC List of ODA recipients (OECD, 2020)

When discussing developing countries, it is inevitable to mention the 17 SDGs adopted by all 193 countries members of the United Nations (UN). As the SDGs is a universal call to action to end poverty, protect the planet, and ensure peace and prosperity. The SDGs provides *"a comprehensive plan of action to build a global partnership for sustainable development to improve human lives and protect the environment*." (United Nations, n.d.-a). The SDGs can be viewed as universal in the sense that they call for actions by all countries, both developed and developing in a global partnership. The SDGs reflect a global vision of progress towards

a safe and sustainable world. No country or human individuals should be left behind. The 17 SDGs contain different challenges for both developed and developing countries alike, which is why the different goals and targets are represented by different degrees of challenge and ambition depending on the state of development and national circumstances (Osborn, Cutter & Ullah, 2015).

The international discussion regarding the SDGs is mostly concentrated around the increasing need to promote development in developing countries and the support needed from more developed countries to achieve these goals (Osborn et al. 2015). While the SDGs are universal and concern all nations, some of the goals have been particularly designed to express individual goals, targets and aspirations of developing countries (Osborn et al., 2015). In contrast, others express the responsibilities of developed countries to assist in the development process in developing countries (Osborn et al. 2015) Osborn, Cutter and Ullah (2015) identifies and suggests a method of analysis to explore significant transformational challenges which the SDGs deeply. The methodology of the report was *"designed to offer a non-biased, objective approach to understanding, country by country, where attention is most needed to advance sustainable development both locally and globally"* (Osborn et al., 2015).

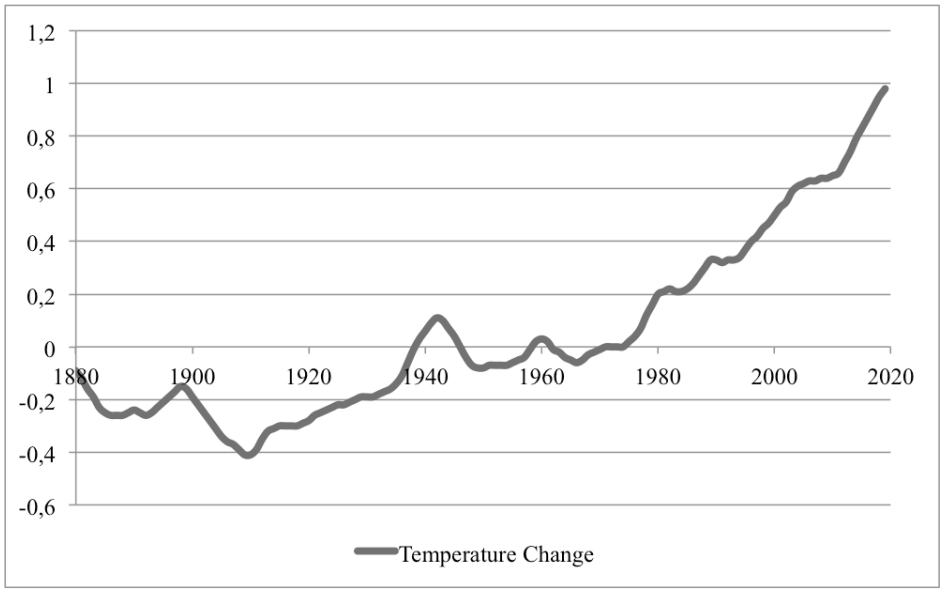
The general idea behind the report is to score the SDGs based on the three criteria: applicability, impenetrability and transformational impact. The SDGs with the highest score represents the biggest transformational challenges for developed countries to assist the development process in developing countries. The report assigns the highest scores to goal 13 *"Take urgent action to combat climate change and its impacts,"* and goal 7 *"Ensure access to affordable, reliable, sustainable and modern energy for all"* (Osborn et al., 2015). Furthermore, the report states that these are the areas with the most significant need for attention by developed countries. The global significance can explain the result these goals will have, going beyond the individual country as many of the developing countries are particularly vulnerable to especially climate change effects (Osborn et al., 2015). The statement is supported by major institutions like IPCC, UN and World Economic Forum. In the World Economic Forum's Global risk report from 2019, the top three risk by the likelihood is extreme weather events, failure of climate-change mitigation and adaption, and natural disasters (WEF, 2019).

The effects of climate change on people living in poverty are further described in Hallegatte et al. (2016) book *"Shock waves: managing the impacts of climate change on poverty."* The book describes how climate-related shocks and stresses, already is a major obstacle to poverty reduction and how it will worsen in the future. According to the book, climate change is involved in most shocks that will keep or bring a household into poverty. The book explains how people living in poverty are disproportionately affected as they are not only more exposed but also invariably more vulnerable to the effects of climate change. Poor people are more vulnerable due to fewer resources, less support from the family, community, the financial system and safety nets. In the short run, the book claims that rapid, inclusive, and climate-informed development can prevent an additional 100 million people from living in extreme poverty by 2030. The book specifies how immediate action can prevent long-term threats for poverty eradication.

Further explanation of academic findings on how climate change affects development, focusing on people living in poverty can be found in the literature review. This section will, however, continue to focus on developing countries and how they are affected by the SDGs, which climate targets are established to ensure positive development in developing countries.

3.3 Climate Targets

Climate change is a serious global concern. The current changes in the world's climate are magnifying the risks of instability. The last two decades have made the threat clear, as the 18 warmest years have been recorded (Simmons, Berrisford, Dee, Hersbach, Hirahara and Thépaut, 2016). The trend is visualized in graph 1, which shows the global average temperature change from 1880 to 2020. The trend makes immediate and decisive climate actions essential. Further investigation on climate change and the effects will be explained in the literature review. The IPCC report specifies how the global average temperature increase could reach above 3°C by 2050 if no actions are taken.



Graph 1: Global Average Temperature Change 1880-2020 (°C), (Data from NASA/GISS, 2020)

3.3.1. International Climate Targets

The EU's long-term strategy aims to achieve net-zero greenhouse gas (GHG) emissions by 2050 through a socially fair transition in a cost-efficient manner (Nathan & Scobell, 2012). The EU's objective, as stated in the 2019 European Green Deal, is in line with the global climate actions agreed upon in the Paris Agreement. In order to reach its 2050 target, the EU has set itself targets for reducing its GHG emissions progressively up to 2050. The EU's 2030 Climate & Energy framework includes EU-wide targets and policy objectives for the period from 2021 to 2030 (European Commission, n.d.-a). These short-term targets include vital objectives such as a 40 per cent cut of GHG emissions, which will enable the EU to move closer towards their climate-neutral economy and implement its commitments under the Paris Agreement. Linked to this is a binding target of 32 per cent for renewable energy, an increase from its original target of 27 per cent combined with a target of at least 32,5 per cent for energy efficiency. Other key targets include an objective regarding a transparent and dynamic governance process to ensure progress towards the 2030 climate and energy targets (European Commission, n.d.-a).

Since most climate targets are linked to the Paris Agreement, it plays a significant role outside and inside the boundaries of the EU and the established climate targets. The Paris Agreement is seen as one of the most influential agreements as it tries to provide a global framework to

avoid dangerous climate changes by limiting warming to below 2°C. It also aims to strengthen countries' ability to respond to the threats of climate change and its impacts (European-Commission, n.d.-b).

The Paris Agreement is the first universally legally binding climate agreement. The targets agreed upon in the Paris Agreement, thereby creates a *"bridge between today's policies and climate-neutrality before the end of the century"* (European Commission, n.d.-b). Thus, the critical elements from the Paris agreement will set the standards and provide guidelines for future agreements as seen in EU's 2030 Climate & Energy framework. Some of the most significant elements the governments have agreed upon were *"long-term temperature goal, mitigation, reducing emissions, transparency and adaption"* (European Commission, n.d.-b).

The nations that have signed the Paris Agreement have committed to keeping the increase in global average temperature to below 2°C by cutting global emission. It is recognized that it will take longer for developing countries. Furthermore, nations must submit climate action plans to increase transparency, which is assisted by a meeting every fifth year to assess the collective progress towards long-term goals. The governments also agreed to strengthen the most vulnerable societies' ability to deal with the impacts and enhance international support for adaptation to developing countries (European Commission, n.d.-b). For further explanation of the Paris Agreement reference is made to the literature review.

The interlink between climate targets and sustainable development is, therefore, inevitable, as climate change presents the single biggest threat to sustainable development. Hence, achieving the primary goals of the Paris Agreement plays a vital part in order to achieve the SDGs. Taking the SDG commitments into account can consequently help countries ensure that climate actions promote social, economic and environmental ambitions. Considering both climate actions and SDG targets can, at the same time, help avoid duplications of efforts and opportunities and make budget allocation more efficient.

3.3.2. National Climate Targets

Developing countries are considered to be the most vulnerable to the effects of climate change. However, economic growth and sustainable development issues are also critical concerns for developing countries. Their primary concern is that by accepting quantitative emission limitation or reduction objectives, economic growth may be constrained.

The differences in national circumstances must, therefore, be considered when outlining sustainable development and climate change targets. A practical approach against climate change must accommodate these circumstances. The controversy is that developing countries historically have contributed a minimum to GHG emission, so why should these countries limit their ability to sustainable development and economic growth by agreeing to the necessary reductions to reach global climate targets. However, some of the cities with the highest population growth are in developing countries, and most research shows a positive correlation between this trend and GHG emissions (Xu et al., 2019) The trend underlines the imperative role developing countries play in reaching global climate targets. Hence, the Paris Agreement grants extra flexibility to developing countries that accommodate these circumstances, referred to in article 13 of the Paris Agreement (European-Commission, n.d.-b).

Considering most SDGs and climate change effects surround the African continent in some way, it is interesting to examine what collective initiatives Africa is incorporating to facilitate sustainable development and to address the challenges of climate change. The African Union Commission presented in 2015 the report *"Agenda 2063: The Africa We Want."* (African Union Commission, 2015). Here it is stated that Africa at the time of writing only contributes less than 5 per cent of the GHG emissions but bears the brunt of the impact. Therefore, Africa is participating in the global efforts for climate change mitigation to support and broaden sustainable development on the continent. Some of the implementations in the report on climate actions in Africa includes: *"identification of five regional technology centers, programs on climate change targeting women and youth, climate-resilient agricultural development, sustainable forest management, national adaptation plans, systems and structures, and sustainable exploitation and management of Africa's diversity"* (African Union Commission, 2015, p.18).

The African heads of states have following the 21st Conference of the Parties (COP21) meeting in Paris launched the African Renewable Energy Initiative (AREI), which aims at mobilizing the African potential to generate at least 300 gigawatts of new and additional renewable energy by 2030. Furthermore, the AREI intends to achieve sustainable development, enhance well-being, and economic growth by ensuring access to sufficiently clean and affordable energy. This makes the AREI unique as it is the first Africa-owned and led effort directed to climate change and clean energy efforts (African Union Commission, 2015).

3.3.3. Mitigation and Adaptation

Mitigation and adaptation have a significant role in both the Paris Agreement and the EU's 2030 Climate & Energy framework. This makes it reasonable to investigate further what mitigation and adaptation mean and include. Climate change mitigation is mostly referred to as curtailing GHG emissions to lower the likelihood and magnitude of global warming and the adverse effect related to it (Kane & Shogren, 2000). Going forward, mitigation will imply reducing GHG emissions or increasing carbon sequestration. This includes "*reduction of carbon emission through the more efficient conversion of fossil fuels, or switching to low-carbon energy sources, […] and use of more energy-efficient technologies in the industrial, commercial and residential sector"* (Kane & Shogren, 2000, p.8).

Climate change adaptation focuses on anticipating the adverse effects of climate change by taking the necessary actions to prevent or minimize the damage caused by it, or in some cases taking advantage of the opportunities provided by climate change. It has shown in numerous reports that adaptation actions planned well and early can save both lives and money (Kane & Shogren, 2000). This involves adjusting to the actual or expected climate, intending to reduce the vulnerability of the harmful effects of climate change, for example, rising sea levels, more intense extreme weather events, or food insecurity (Kane & Shogren, 2000). It also encompasses taking advantage of any potential beneficial opportunity related to climate change. For example, longer growing seasons or increased yields (Kane & Shogren, 2000).

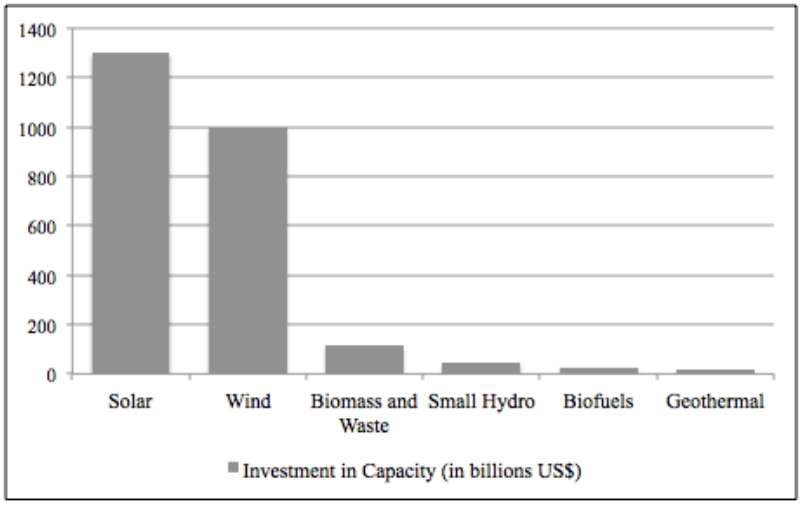
In conclusion, mitigation and adaptation can help reduce climate change risk alone or in a combination of the two. In the article by Kane and Shogren (2000), they explore the combined option by using *"the economic theory of endogenous risk to formalize the idea that people use an optimal mix of mitigation and adaptation to reduce risk"* (Kane & Shogren, 2000, p.22). The article states that policymakers can benefit from further investigating how the actual linkage is between mitigation and adaptation and how climate changes affect this linkage (Kane & Shogren, 2000).

3.4 Clean Energy

The Natural Resources Defence Council (NRDC) (Shinn, 2018) defines clean energy, also known as renewable energy, as *"natural sources or processes that are constantly replenished"*. The most common clean energy sources today are solar power, wind power, hydroelectric power, biomass energy, geothermal energy, and tidal and wave energy (Shinn, 2018). Humans have been utilising these natural energy sources long before the discovery of fossil fuels such as oil and coal. However, clean energy is often associated with new technology (Shinn, 2018), due to the innovative solutions that has made the energy source cheaper and more reliable (Mathis, 2019).

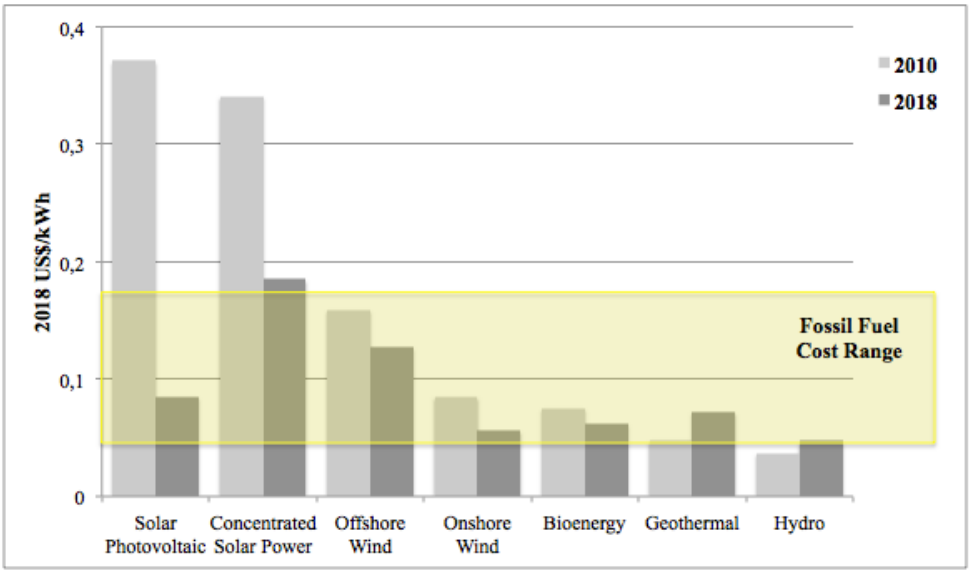
3.4.1. The Clean Energy Market

The reduction in costs of clean energy is making new projects economically competitive against fossil fuel (Mathis, 2019). As a result, total global investments into clean energy from 2010 to 2019 was US$ 2.6 trillion (BloombergNEF, 2019; Mathis, 2019). Furthermore, the International Energy Agency (IEA) has forecasted that two-thirds of the investments into the power industry will go to clean energy, which is equal to US$ 322 billion a year through 2025, with only one-third, or US$ 166 billion, to fossil fuel plants (Mathis, 2019). With the rapid technological evolution the world is seeing today, it is expected that the clean energy sector will continue to increase in the future (Ambrose, 2019).



Graph 2: Clean Energy Investment in Capacity (Data retrieved from Mathis, 2019)

Today, solar and wind power is the most common clean energy source and is the biggest contributor to the new investments made into the sector, shown in graph 2 (Mathis, 2019). The increase in investments has led to significant reduction in costs and most clean energy sources are now in the same cost range as fossil fuel (see graph 3). The global solar power capacity has increased by 2500 per cent, from 25 gigawatt (GW) generated in 2010 to 663 GW by the end of 2019 (Mathis, 2019). According to BloombergNEF, wind and solar power will contribute to 48 per cent of generated energy by 2050 (Mathis, 2019).



Graph 3: Clean Energy Price per kWh (created by authors, data from IRENA, 2019, p.12)

Despite the substantial amounts invested, clean energy contributes to a relatively small amount of the global energy generation (Mathis, 2019). The sector is reliant on public funding, but it is unlikely that it will increase to more than its current level of approximately 15 per cent of total investment (IRENA, 2016). Hence, the private sector needs to participate even more in the clean energy sector to unlock the substantial opportunities it can create (IRENA, 2016).

3.4.2. Clean Energy in Developing Countries

According to IRENA (2016), the investments need to triple in this decade, and due to the developing markets having the fastest growing demand for energy, the developing countries will need the largest increase in investment. It is predicted that the global energy demand will increase by 30 per cent, mostly in the developing countries. For instance, Africa is forecasted to increase its electricity demand by 300 per cent by 2030, since standards of living are increasing and the continent is experiencing continuing industrialisation (IRENA, 2016).

Furthermore, the developed countries have already started closing its fossil fuel plants and thereby reducing its carbon emissions (Evans & Pearce, 2020). Sadly, this is offset by an increase in fossil fuel plants in developing countries, which has led to an overall increase of 10 per cent in global carbon emissions from 2009 to 2019 (Mathis, 2019). Despite the fact that cost for clean energy is decreasing, in many developing countries it is still often more expensive than fossil fuel energy sources, such as coal (Hirth et al, 2015 in Steckel & Jakob, 2018). Therefore, they rather invest in infrastructure supporting fossil fuels. Since the economic life span of such infrastructure usually is 40 years or longer, they are locking themselves in a high-emissions system for many years (Steckel & Jakob, 2018).

As a result, it is cheaper to build clean energy systems in developing countries, which have yet to update its energy infrastructure. Hence, increased private investment in the clean energy sector in developing countries needs to happen now, especially since it is an essential component to achieving the climate targets agreed upon under the Paris Agreement (Steckel & Jakob, 2018).

4. Theoretical Framework

To address the research question, the theoretical framework section will focus on the essential theories applied in this research. A comprehensive review of Edward Freeman's Stakeholder theory and its relation to the research is carried out. Subsequently, will the section describe the primary objectives of the SWOT analysis and its part in providing awareness of the elements involved in making a strategic decision.

4.1. Stakeholder Theory

Edward Freeman (1984) first introduced the Stakeholder theory in his book *Strategic Management: A Stakeholder Approach* as a strategic management tool (in Elms, Johnson-Cramer & Berman, 2011). Since then, it has received contributions from multiple disciplines, such as economics, organizational theory, ethics and law (Freeman & Phillips, 2002).

According to Freeman and Phillips (2002), the central idea of the theory is that the success of an organization is dependent on how it "*manages the relationships with key groups […] that can affect the realization of its purpose*." (p. 333). In other words, shareholders are not the only group that can affect the firm's performance. By managing the stakeholders' interest and treating them well, the firm creates value in multiple dimensions and, as a result, increases firm performance (Harrison & Wicks, 2013). The existing empirical literature has supported the positive relationship between stakeholder-oriented management and company performance; however, companies' performance is mostly determined by financial returns (Harrison & Wicks, 2013). Harrison et al. (2013) state that even though financial performance is important for many stakeholders, it is not the only valuable aspect. Therefore, they created a definition of firm performance, which follows Freeman's (1984) idea: "*the total value created by the firm through its activities, which is the sum of the utility created for each of a firm's legitimate stakeholders*" (p.102).

There are conflicts of interest and tensions between different stakeholders of an organization (Harrison & Wicks, 2013). The cause can be the fight over a limited amount of resources the organization has, or stakeholders motivated solely by self-interest (Harrison & Wicks, 2013). Nonetheless, the Stakeholder theory emphasizes that the interest of each

stakeholder overlaps each other, and by balancing the interests, all stakeholders will become better off over time (Freeman et al, 2007 in Harrison & Wicks, 2013). Consequently, the stakeholders are dependent on the organization and the other stakeholders to safeguard their interests. Phillips (2003 in Harrison & Wicks, 2013) recognizes a legitimate stakeholder as "*those groups to whom the firm owes an obligation based on their participation in the cooperative scheme that constitutes the organization and makes it a going concern"* (p.102).

This often includes communities, suppliers, customers, investors, governments and employees. Clarkson (1994) divides legitimate stakeholders into two groups: voluntary or involuntary risk bearers (in George & Prabhu, 2000). The voluntary risk bearers have invested some form of capital, financial or human, into the organization, such as the employees, investors and governments. The involuntary risk bearers have been placed at risk due to the activities of the organizations (George & Prabhu, 2000). The local communities are often described as an involuntary risk bearer. Figure 4 shows an overview of stakeholders. Organizations can have other legitimate stakeholders that are specific to their doings (Harrison & Wicks, 2013), which are not indicated in figure 4 below.

Figure 4: Stakeholders (Created by Author, based on Freeman et al., (2017), p.113)

Each of the stakeholder groups has different reasons for being closely connected with the organization. The investors have a financial stake in the organization and expect a financial return (Freeman, Dmytriyev & Strand, 2017). The company needs the financial support of the financers. Employees have their jobs and usually their livelihood at stake (Freeman et al., 2017). Therefore, in return for their work, they expect security, wages and meaningful work. Customers and suppliers exchange resources for their products and services of the organization and, in return, receive the benefits for their products and services (Freeman et al., 2017).

Furthermore, the supplier is an important stakeholder as they supply the service or product (Freeman et al., 2017). If the supplier finds a way to create their products faster, better and cheaper, then both suppliers and the organization are better off. The local community is being impacted by the organization located in the area and the organizations are committed to operate in a transparent manner (Freeman et al., 2017).

4.2. Energy Investment Level

To increase private investment in the clean energy sector, it is essential to understand what determines the level of investment. Wüstenhagen & Menichetti (2011) created a conceptual model that shows the level of investment as a function of risk, return and public policy. Figure 5 shows the model below:

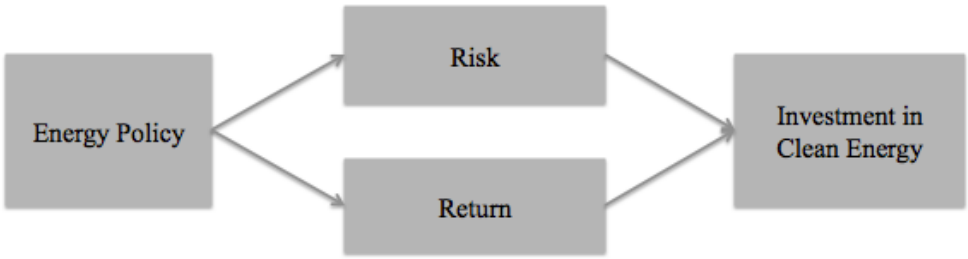


Figure 5: Energy Investment Level Model (created by authors, based on the *Standard Model,* Figure 2 in Wüstenhagen & Menichetti, 2011)

Wüstenhagen and Menichetti (2011) created the model with financial theory in mind since risk and return are the fundamental determinants for an investor's decision making. In

financial theory, they argue that an investor will compare different investment possibilities by assessing its risk-adjusted returns (Wüstenhagen & Menichetti, 2011). If an investment opportunity has a high level of risk, the investor will need a higher return rate and vice versa.

Clean energy is often associated with higher risks than fossil fuel energy, as it relies more heavily on environmental externalities (Wüstenhagen & Menichetti, 2011). For instance, to be able to use solar power, there needs to be enough sun, or to use wind power, enough wind. Nevertheless, creators of the model in figure 5 argue that there is a solution to minimize the risks, and that is with energy policies. They believe that with the right energy policies in action, the risk-adjusted return could be in favour of clean energy. Giving out loan guarantees would minimize the financial risk. There have been debates about the importance of energy policies on investor's decision-making (Wüstenhagen & Menichetti, 2011). Some believe in the effect public policies can have on investment decisions, others highlight that the role of private capital is to seek out prospects regardless of policies in place. However, due to clean energy still being a niche in the investment community, there is an agreement that, as of now, energy policies have the effect of increasing or decreasing investments in the clean energy sector (Wüstenhagen & Menichetti, 2011). Therefore, it is important to understand what lies under the three dimensions in the clean energy sector.

4.2.1. Energy Policy

Energy policies are put in place by the public authorities to intervene in the energy sector with the aim of improving energy efficiency in both supply and consumption (McGowan, 1996 in Prontera, 2009). These policies can either be official, meaning strategically determined policies to affect the energy efficiency, or unofficial, meaning policies not created to affect the energy sector specifically, but have an effect on it regardless (McGowan, 1996 in Prontera, 2009).

It is also important that the policies introduced are recognized as credible by private investors (Hovi et al, 2009; Brunner et al, 2012; Helm et al, 2003 in Steckel & Jakob, 2018). This is especially important for long-term policies. In relation to long-term clean energy policy, it is seen as credible if it is expected to be in place for a long time and will continuously be adapted when governments strengthen their climate targets. Situations such as frequent

policy-reversals or inconsistencies in emissions data can express uncertainty on the government's motivation and ability to change to cleaner energy (Steckel & Jacob, 2018). As a result, decrease the reliability and credibility of both the government and the policies they have enforced. Hence, higher uncertainty leads to higher financial costs. Nemet et al. (2017, in Steckel & Jakob, 2018) argue that policy uncertainty can be reduced by *"flexible design in rules, increased transparency, addressing distributional conflicts, as well as robust policy implementation"* (p.23).

4.2.2. Risk

In financial terms, the risk is defined as the possibility of the actual outcome of an investment differing from the expected outcome and the difference can be both negative and positive (Chen, 2020). However, the risk is often associated with something negative. There are many risks associated with investing in developing countries and in a niche sector as clean energy. The risks most often associated with the level of investment in the sector is: project risk, political risk and financial risk (IRENA, 2016; Steckel & Jacob, 2018). Furthermore, risks are interconnected (WEF, 2019) and therefore, an increase in one risk will automatically increase the other risks as well, and vice versa.

The underlying market barriers in developing countries and private investors belief of high risk in the clean energy sector are hindering the advancement and funding of new projects (IRENA, 2016). This leads to high project risk for private investors. It does not help that clean energy technology has decreased in cost, when the risks associated with investing in it remains. Also, as the sector is still regarded as a niche, it is difficult to find attractive projects (IRENA, 2016). Therefore, finding appealing projects that are attractive and gaining access to financial support is seen as the most significant barrier to the clean energy sector.

As stated above, an unstable political environment is another dimension affecting the level of risk private investors meet. Policy, also called political, induced risks are often associated with construction delays, default on expected payments and expropriation (Steckel & Jacob, 2018). This is especially an issue in developing countries where the institutional systems are weak and often prompted by corruption. Since developing countries often are under-

capitalized due to the lack of financial income from taxes, the risk of governments defaulting on payments to private investors is high.

Also, in developing countries, there are financial risks associated with clean energy investments. As clean energy investments are reliant on public policies, financial de-risking is usually associated with risk transfer from the private investor to the public sector (Steckel & Jacob, 2018). Higher financial costs are due to private investors being risk-averse (Norfund, 2016). Hence, by either providing subsidies that lower the interest rates, private investors pay or increasing the offerings of loans at attractive rates are methods of decreasing the financial risk (Steckel & Jacob, 2018). IRENA (2016) argues that the ability to access risk mitigation instruments is crucial to increase private investment into the sector. By increasing the amount of private investment, clean energy projects can become more accessible to mainstream investors and thereby considerably scale up investment levels further (IRENA, 2016).

4.2.3. Return

The financial return is the money made or lost over a time period on an investment (Hayes, 2020). The clean energy sector is experiencing immense growth, as stated by BloombergNEF (Mathis, 2019). The increase in investments in the sector indicates that investors believe in satisfactory returns by investing. The increase in technological innovations will strengthen this growth, as the cost of clean energy is decreasing and thereby increasing the possible profit. Furthermore, as developing countries are experiencing the largest growth rates today and will need the substantial in energy capacity, it is expected that there is an immense return possibility there (IRENA, 2016).

However, financial return is not the only purpose for companies. It is also to increase the well-being of stakeholders through its products and/or services (Hawken, 1993). Furthermore, it is believed that being socially responsible will even increase investor's financial returns in the long run, because a company operates at it best when it has good morale and positive vision (Hawken, 1993). According to IRENA (2016), there are many social aspects that will be improved by investing in clean energy. It states that continuing with the amount of clean energy the world has today, 12 gigatonnes (Gt) of

energy-related CO2 emission is avoided by 2030. Furthermore, air pollution is reduced that can save up to 4 million lives per year, and by limiting the average global temperature to 2°C, more lives can be saved in the future. The global GDP will also increase up to US$ 1.3 trillion. Hence, incorporating the stakeholders' needs is important to achieve social and environmental returns.

4.3. SWOT

To be able to provide a strategic plan with the objective to restructure Norfund's CE department's investment strategies considering stringent climate targets, a SWOT analysis is performed. This section will, therefore, summarize the main intentions behind the SWOT.

The primary objective of the SWOT analysis is to gain awareness of the factors involved in making a business decision similar to restructuring investment strategies (Gürel & Tat, 2017). The SWOT analysis was created in the 1960s by Albert Humphrey of the Stanford Research Institute, during a study to identify why corporate planning consistently failed. Since then, it has become an acknowledged tool for strategic planning as *"it can be used effectively to build organizational strategy and competitive strategy.* (Gürel & Tat, 2017). The idea behind the analysis is that an organization exists in two environments, the internal and the external. The internal dimension is analyzed through its strengths and weaknesses, while the external dimension focusses on the environmental factors described as opportunities and threats.

The process of analyzing the environment can help the organization identify its capabilities, deficiencies, the opportunities in the market and the external threats (Gürel & Tat, 2017). The acronym SWOT stands for *strengths, weaknesses, opportunities and threats,* and the result of the process is to identify the forces that influence initiatives to restructure current investment strategies (Gürel & Tat, 2017). Finding the organization's strengths and opportunities can be a helpful tool to gain information about what is favorable for the organization, while weaknesses and threats describe what can be harmful for an organization for them to achieve their objectives. Therefore, for the chance to create a successful selection of strategies, the aim of the analysis should be to create a fit between externalities and internalities, while

balancing the organization's strengths and weaknesses considering the environmental opportunities and threats (Gürel & Tat, 2017).

Even though the SWOT analysis is a widely used technique, it has allocated much criticism over the years. Most of the criticism directed at the SWOT analysis regards to lack of prioritization, lack of clarity, its subjectiveness and that it only presents a general perspective but not solutions (Gürel & Tat, 2017). Taking the limitation and disadvantages of the SWOT analysis into account, this analysis will be using the SWOT technique as both a summarizing tool and a starting point for further discussion, as the technique itself does not provide the necessary actions to enact strategic change (Gürel & Tat, 2017).

5. Literature Review

The purpose of the following section is to enlighten the reader with the necessary information from existing data on how climate change. The main objective is to give an understanding of the reports, articles and books used as secondary data. This implies that the project does not provide a complete and thorough description of the entire reports and its components. The information provided is viewed as needed to understand the subsequent analytical reasoning. If the reader, however, would like to learn more about the subject, we recommend reading; *"Mapping Development Finance Institutions Worldwide: Definitions, Rationales, and Varieties" by Xu et al., (2019)"Climate Change and Developing Countries"* by N. H. Ravindranath and Jayant, (2003), *"Ecology of Commerce*" by Hawken, (1993), *"Banking for a Better World"* by Kleiterp and Wiersma (2017), *"Emissions Gap Report 2019"*, by United Nations Environment Programme, (2019), *"The heat is on"* by Doyle, (2019), and "*Climate Change 2014: Impacts, Adaption and Vulnerability*" by IPCC, (2015).

The following literature review begins with an overview of knowledge gained from reports and articles on the correlation between climate change and how it affects people living in poverty. This material is further supplied with data on climate change and the most important agreements between nations, based on the data from the reports. This leads to existing literature on climate change mitigation and adaption investment market is introduced. Finally, articles describing common market failures limiting the investment level and how DFIs can be the solution to fix market failures is presented.

5.1 Climate Change

The section will work through the common academic findings on climate change. Jean Baptiste Joseph Fourier made the first scientific discovery of GHGs that traps heat radiated from the earth's surface after it has absorbed energy from the sun in the 1820s (Harding, 2007). Since then, there has been written a lot about climate change and its effects. So far, no recipe for how to successfully reduce emissions of global GHGs has been found. Underneath and in the subsequent section, we elaborate on how climate change affects the people living in poverty and what data currently exist on the topic.

The high focus on climate change makes it a mature research topic, as the number of academic articles increases and even more researchers and scientists try to understand the development and implications of climate change and GHG emission. Numbers from Haunschild, Bornmann, and Marx (2016) show that in the period 1991 to 2010, the amount of climate change-related papers published per year has increased by a factor of ten. The bibliometric created by Haunschild et al. (2016) shows the exponential growth of climate change literature induced by the increasing influence of the IPCC Assessment Reports, which have contributed to eventually making climate change a hot topic. According to Haunschild et al. (2016), the IPCC reports have revealed the strong need for further research to gain a better understanding of the earth's climate system in order to improve predictions. Research is continuously being conducted, but the following reports are carefully selected as they provide essential information, all viewed as necessary for the reader to know.

5.1.1. Impact, Adaptation, and Vulnerability

The Intergovernmental Panel on Climate Change (IPCC) published in 2014 a second volume of the Fifth Assessment Report (AR5) called *"Climate Change 2014: Impacts, Adaption and Vulnerability"* (IPCC, 2014a, p 3.). This second volume is organized in two different parts, devoted to *"human and natural systems, and regional aspects*" (IPCC, 2014a, p. 3). The report is fundamental for the readers who would like to gain a basic understanding of climate change and the impact it has on adaptation and vulnerability. The IPCC is currently also receiving support from 195 members, which includes members of the United Nations (UN) or the World Meteorological Organization (WMO). The IPCC was created by WMO and the United Nations Environment Programme (UNEP) to provide governments at all levels with scientific information to develop climate policies and input into international climate change negotiations.

The report is divided into three different sections. The most critical information in each section will be highlighted. Section A examines *"observed impacts, vulnerability and exposure, and adaptive responses to data"* (IPCC, 2014a, p.3). Section B (IPCC, 2014b) examines future risk and potential benefits, and section C *"considers principles for effective adaptation and the broader interactions among adaptation, mitigation and sustainable development."* (IPCC, 2014c, p.3).

The IPCC has since its foundation in 1988 received criticism from numerous sources for, among other things, has evolved its own rules of governance and procedure in response to both internal and external events (Hulme & Mahony, 2010). Others, however, have a more nuanced critical position. Rothman, van Bers, Bakkes and Pahl-Wostl (2009) studied several different global knowledge assessment processes, including the IPCC. Rothman et al. (2009) suggest better communication of sources of uncertainty and how it is used, along with the presentation of more qualitative data and knowledge. In the article written by Hulme and Mahony (2010), several scientists argue *"the need to be vigilant of how international knowledge institutions like the IPCC gain power and influence in international deliberations and yet are not always open, democratic or accountable in their own modes of operation."*. However, nearly all the commentators and critics agree that IPCC has had a significant role and influence on the public discourse about climate change, climate policy development and climate change knowledge (Hulme & Mahony, 2010). Regardless of whether some scientists may disagree about the exact reason for this influence and whether the influence has been for the best, the IPCC has helped consolidate a global climate change epistemic community (Hulme & Mahony, 2010). The IPCC has also helped create visibility in the public space, as an authority on climate change knowledge. Its visibility was enhanced after it was awarded the Nobel Peace Prize in 2007 (Hulme & Mahony, 2010).

A more specific concern is whether the data and conclusions in the 2014 IPCC report are still relevant in 2020. The subject of climate change is an active topic, which evolves and changes from generation to generation. As the topic of climate change is receiving more attention (Haunschild et al., 2016), new data, findings and new conclusions will be developed. As the world gains more and more data on the subject new technologies will be incorporated in future reports. New findings and data might weaken some of the conclusions from the 2014 IPCC report. The overall picture provided by the report is, however, still relevant. Several acknowledged firms, scientists and institutions are in 2020, still referring to the data and conclusions found in the report. The website *"Our World in Data"* and the integrated website *"SDG-Tracker.org",* a collaborative effort between researchers at the University of Oxford and the non-profit organization *Global Change Data Lab*, are describing the IPCC as *"The most extensive source of analysis on the potential impacts of climatic change can be found in the 5th Intergovernmental Panel on Climate Change (IPCC) report"* (Ritchie &

Roser, 2019). Based on the fact that the IPCC provides assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation along with its influence on governments, scientists and firms, the IPCC report is viewed as necessary and essential data.

5.1.3.1. Section A

In section A it is stated that *"people who are socially, economically, culturally, politically, institutionally, or otherwise marginalized are especially vulnerable to climate change and also to some adaptation and mitigation responses"* (IPCC, 2014a, p.6). This highlights how vulnerability often is the product of intersecting social processes that result in inequalities in socioeconomic status and income. Section A of the report specifies how climate-related hazards have a particularly negative outcome for people living in poverty. Not only do climate-related hazards affect poor people directly, such as heatwaves, floods, wildfires, etc., they also have a negative effect on agricultural practices (IPCC, 2014a).

Throughout history, people have learned to adjust and cope with a variation in climate. Section A of the report also addresses the adaptive human response to risk reduction and development objectives. According to the report, there is an increasing recognition of adaptation experience is accumulating across regions both in public and private sectors (IPCC, 2014a). The report also states that various governments are developing adaptation plans and policies to integrate climate-change considerations into future developing plans. The last part of section A creates the foundation of understanding the assessment of the report of future climate-related risks and potential responses. It states how adaptation and mitigation decisions in the short-term future will affect the risks of climate change in the 21st century. Section A concludes how *"Uncertainties about future vulnerability, exposure, and responses of interlinked human and natural systems are large."* (IPCC, 2014a, p. 11) Furthermore, how this motivates further exploration of how climate change affects negative socioeconomic trends.

5.1.3.2. Section B

Section B of the 2014 report (IPCC, 2014b) presents future risk and potential benefits in multiple sectors and regions in the 21st century and beyond. The focus is on how climate change is expected to affect, especially developing countries with a lack of resources and low income compared to a baseline without climate change.

"Risk is considered key due to high hazard or high vulnerability of societies and systems exposed, or both" (IPCC, 2014b, p.14).

The report underlines that risks are intensified in areas that lack essential infrastructure and services or poor quality of living societies or exposed areas. Reducing service deficits and building resilient infrastructure systems and housing, vulnerability and exposure in these areas could be reduced significantly. The IPCC specifies how *"increased capacity, voice and influence of low-income groups and vulnerable communities and their partnerships with local governments also benefit adaptation"* (IPCC, 2014b, p.18). It documents how there is a higher likelihood of injury, disease and death due to more extreme weather, an increased likelihood of diminished food production, and reduced labor productivity in vulnerable populations. This is likely to slow down economic growth, make poverty reduction more difficult, erode food security and create new poverty traps. Climate change impacts are expected to increase inequality and exacerbate poverty in developing countries.

The conclusion of section B (IPCC, 2014b) is that risks can be reduced substantially with low-temperature increase projection compared to the highest temperature projection. Reduced effects of climate change could, therefore, reduce the scale of adaptation that might be required. However, under all assessed scenarios for adaptation and mitigation, some risk from adverse impacts remains.

5.1.3.3. Section C

Section C (IPCC, 2014c) concentrates on how to manage future risks and build resilience. Risk management involves adaptation and mitigation decisions. Section C evaluates adaptation as a means to build resilience and adjust to climate change impacts. It also discusses limits to adaptation, climate-resilient plans and the role of transformation.

According to the report, adaptation is both place- and context-specific. It highlights how effective risk reduction and adaptation strategies take vulnerability and exposure into account with their linkages to socioeconomic processes, sustainable development and climate change. These adaptation plans and implementations can be enhanced through actions across levels from individuals' firms to governments. Local governments and private sectors are a crucial factor as their part in the progress is increasingly recognized and given their roles in the upscaling adaptation of communities, societies, and in managing risk information and financing (IPCC, 2014c).

The report emphasizes how the first step towards adaptation to future climate change is reducing the vulnerability of developing countries. These actions can co-benefit a range of qualities, such as human health, livelihood, social and economic stability. Existing and emerging economic instruments such as public-private finance partnerships can contribute positively. The report describes how *"governments often play key roles as regulators, providers, or insurers of last resort"* (IPCC, 2014c, p.44). However, poor planning, overemphasizing, or failing to anticipate consequences sufficiently can result in maladaptation. Maladaptation often has negative consequences such as an increase in vulnerability or exposure, and increasing risk related to climate change. The report indicates a gap between global adaptation needs and the funds available *"There is a need for a better assessment of global adaptation cost, funding, and investments."* (IPCC, 2014c, p. 28).

During the end of section C, the report describes significant co-benefits and synergies between mitigation and adaptation. Examples of the action which would co-benefit include *"(i) improved energy efficiency and cleaner energy sources, leading to reduced emissions of health-damaging climate-altering air pollutants, (ii) reduced energy and water consumption in urban areas […] (iii) sustainable agriculture and forestry)*" (IPCC, 2014c, p. 28).

The conclusion of section C states that climate-resilient pathways are sustainable-development trajectories that combine mitigation and adaptation to reduce the impact of climate change (IPCC, 2014c). These pathways include processes to ensure that effective risk management can be implemented and sustained, for example, *"Since mitigation reduces the*

rate as well as the magnitude of warming, it also increases the time available for adaptation to a particular level of climate change" (IPCC, 2014c p.46) The report describes how the pathways are fundamentally related to what the world accomplishes with climate change mitigation. As mitigation reduces the effects of higher temperatures, it also increases the time available for adaptation. This means that delaying mitigation actions may reduce possible options for climate-resilient pathways in the future.

5.1.2. The Heat is On

This section will define and specify important information from the 2019 NDC Global Outlook Report. The report named *"The heat is on"* (Doyle, 2019) looks at one of the most iconic multinational agreements of the modern era, the 2015 Paris Agreement. People throughout the world rejoiced the news that governments finally had agreed on a solid plan to tackle climate change. As the Paris Agreement faces its five-year milestone, the report looks back at what is achieved along with what choices governments will make at the five-year mark that will profoundly affect the planet in the future. Nationally determined contributions (NDCs) are considered as the backbone of the Paris Agreement. According to the report, one of the fundamental principles of the Paris Agreement is that nations will toughen their NDCs every five years in order to fight climate change. The first opportunity to revise the NDCs is in 2020.

"The good news is that momentum has been building since the adoption of the Paris Agreement. Since then, more and more key actors are aligning their plans, policies and projections with Agreement" (Doyle, p.4 2019).

According to the report, there are promising signs of ambition from most countries. However, much more is needed to limit emissions and adapt to the worsening impacts of climate change. Developing nations are currently leading in preparations to revise plans for combatting the climate crisis over the next decade. 112 nations that are accountable for 53 per cent of the global GHG emission have stated the intent to revise their plans. Policymakers need to define clear pathways to limit GHG emission in the coming decades, especially in developing countries, as they are considered to have the strongest global population and urbanization growth (Doyle, 2019).

Fifty-three countries are currently involved in working on their long-term strategies to submit by the end of 2020. These nations consist of more industrialized nations that will be phasing out GHGs from their economies. These plans include radical shifts from fossil fuels to cleaner energies, like solar and wind (Doyle, 2019). Out of the 112 nations who are revising their climate plans, 75 mostly developing nations are leading by example (Doyle, 2019). They want to enhance their ambitions of current plans as many of them are in the group of most vulnerable to the impact of climate change. However, the outcome is still unclear as these nations are deciding on how they intend to approach their NDC revision. While there has been acceleration in climate actions since the Paris Agreement, it still falls short of an unprecedented transformation needed. GHG emission is set to keep rising in the coming decade with the current trends.

An analysis made jointly by UNDP and UNFCCC is mentioned in the NDC Global Outlook Report 2019, which states, that the most critical factor limiting raised ambitions for the developing nations is *"access to or availability of finance"* (Doyle, 2019, p. 7). The joint analysis also reveals that gradually more governments recognize that actions to address climate change are inseparable from delivering the Sustainable Development Goals (SDGs) to eradicate poverty, hunger and reduce inequality.

The analysis states that *"Climate change is already disrupting national economies and affecting lives, with a disproportionate impact on the poor, and prioritizing adaptation to climate change is increasingly seen as critical for resilient, sustainable development."* (Doyle, 2019, p. 22). The report describes how tightening the links between SDGs, and national development goals could help reinforce actions to eliminate poverty and hunger. This opinion is shared by the World Bank who states that *"Poverty eradication and sustainable development goals cannot be met unless there is a collective push to address climate change at the same time"* (The World Bank, 2017).

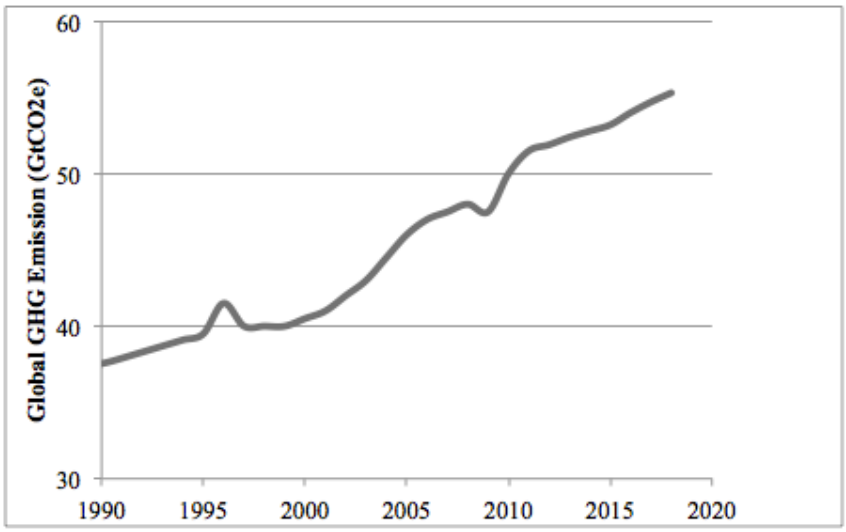
The closing statement in the report mentions that given current trends, the world is at risk of being 3°C warmer than at pre-industrial times, which is twice as warm as the goal of 1,5°C set by governments in 2015 in Paris. The NDC Global Outlook Report 2019 points to 2020 to be

a critical year for galvanizing support from all nations to more robust ambitions in order to reach net-zero CO2 emissions by 2050 (Doyle, 2019).

5.1.3. The Emissions Gap Report

Climate change and the effects on people living in extreme poverty has become a heavily scrutinized topic as the climate change focus continues to increase (Haunschild et al., 2016). The following section will highlight information from the UN Environment Programme's *Emissions Gap Report 2019*.

The UN Environment Programme publishes *the Emissions Gap Report* annually. The report is a science-based assessment of the gap between countries' pledges on GHG emission reductions and what is actually required. It compares current levels of GHG emissions against emissions levels, which would help avoid the worst impacts of climate change. Every year, the report has concluded that the world is not doing enough. GHG emissions are now hitting a new high of 55.3 gigatons of CO2 equivalent (GtCO2e) in 2018 (UNDP, 2019). This is shown in graph 4 below. GHG emission has risen by 1.5 per cent per year in last year in the last decade. By 2030, the emissions would need to be approximately 25 gigatons, which is 55 per cent lower than in the levels of 2018 to put the world on the least-cost pathway to limit global warming to between 2°C and 1.5°C, respectively.



Graph 4: Global Greenhouse Gas Emission 1990-2018 (Data from UNDP, 2019)

Economic growth in non-OECD member countries has in the last decade, been stronger (4.5 per cent) than in OECD member countries (2 per cent) per year (UNDP, 2019). OECD and non-OECD members have had similar declines in the amount of energy used per unit of economic activity, which means that primary energy use has increased much faster for non-OECD members. The members of OECD use less energy per unit of economic activity, which suggests that there is a potential to accelerate improvements as they grow for non-OECD members. The report presents an assessment of global emissions pathways in order to keep warming in the range of 2°C to 1.5°C. With the current policies, GHG emissions are estimated to be 60 GtCO2e in 2030. With the least-cost pathway towards the Paris Agreement goals in 2030, median estimates are 41 GtCO2e for 2°C and 25 GtCO2e for 1.5°C (UNDP, 2019).

The report clearly describes the dire consequences of inaction, which is backed by record temperatures and extreme weather events worldwide. The report emphasizes how renewable energy sources and energy efficiency, in combination with the electrification of end uses are essential to successful energy transition and thus decreasing energy-related CO2 emissions. The report states that the necessary transition of the global energy sector will require significant investments compared with a "business as usual" scenario. In order to reach the 1.5°C goal, it is estimated that it will require an upscaling of the energy system supply-side investments to between US$1.6 trillion and US$3.8 trillion per year between 2020-2050 (UNDP, 2019). The report points to renewable energy as a critical element as technological development has led to a rapid decline in cost compared to previous predictions. It also states that renewable energy is the cheapest source of new power generation in most of the world, with turbines and utility-scale solar power systems leading the way.

5.2. Investment in Climate Change Mitigation and Adaption

This part of the literature review will give an overview of the main topics concerning climate change-related investment spanning from Paul Hawken's book released in 1993 to the newest United Nations Reports from 2019. The aim is to give the reader an overall understanding and to identify areas, which would benefit from more research.

5.2.1. The Current Investment Market

The United Nations (2019) stated: *"Climate protection and adaption investment will become a precondition for peace and stability, […]"* (UNDP, 2019). Increased investments into climate change mitigation and adaption are seen crucial to achieving the needed changes in time (Nur, 2019; Jaiswal, Joshi & Kwatra, 2019; IPCC, 2014a; IPCC, 2014b; IPCC, 2014c; United Nations, 2015; Atteridge, 2011; Stewart et al., 2009). As previously mentioned, to achieve the Paris Agreement goal of *"below 2°C",* preferably 1.5°C, during this century, global investments into the energy sector will require between US$ 1.6-3.8 trillion per year globally on average between 2020 and 2050 (UNDP, 2019; United Nations, 2015). The Intergovernmental Panel on Climate Change (IPCC) stated that US$ 2.4 trillion in investments is needed, which is 2.5 per cent of global GDP (Doyle, 2019). In 2016, approximately US$ 681 billion was invested, indicating that there is still a long way to go (Doyle, 2019). But even if we are still a long way from the target, what has been invested is already creating small but important changes. In 2018, global investment in renewable energy was three times higher than in coal and gas-fired generation capacity combined at US$ 272.9 billion (UNDP, 2019). According to the Frankfurt School-United Nations Environment Programme (UNEP) Collaborating Centre and BloombergNEF (2019), this helped the world avoid approximately 2 gigatons of carbon dioxide emissions (UNDP, 2019).

In his book *The Ecology of Commerce*, Paul Hawken (1993) writes: *"The ultimate purpose of business is not, or should not be, simply to make money. […] The promise of business is to increase the general well-being of humankind through services, a creative invention and ethical philosophy."* (p.1). Paul Hawken is a prominent author, activist and businessman. He has written multiple national bestsellers, founded successful, ecologically conscious businesses, and consulted both heads of states and CEOs on economic development (UN Global Compact, 2017). His book was an important contribution to the literature regarding ecologically conscious economic development when it was released and has remained relevant with time. Hawken (1993) concludes the first chapter with the following statement: *"Business is the problem and it must be a part of the solution. It's power is more crucial than ever before if we are to organize and efficiently meet the world's needs."* (p.17). It highlights the need for private investors to enter the environmental scene and be a part of the change since without private contribution it will not be possible to fight climate change (Atteridge, 2011; IPCC, 2014a, 2014c; Nur, 2019; Stewart, Kingsbury

& Rudyk, 2009; UNDP, 2019). Private investment, compared to foreign aid, has been acknowledged as the most desirable way to improve global livelihood for decades (Atteridge, 2011).

5.2.2. Foreign Aid versus Private Investment

There is a continuous discussion regarding the need for foreign aid. Developing countries are the primary receivers of foreign aid. Herzer and Grimm (2011) and Snyder (1996) researched the effect foreign aid has on private investment. Placing political and humanitarian motives aside, they concluded that foreign aid is not attractive due to the negative effect it has on private investment (Herzer & Grimm, 2011; Snyder, 1996). Herzer & Grimm (2011) argued that the negative effect is primarily due to aid not generating optimal complementarities between public and private investment, as it often crowds out private investors. Werksman (2009, referred to in Stewart et al., 2009) also argues that developed countries should preferably work in partnership with developing countries, as this would lead to more sustainable solutions due to the building of *"institutional and policy conditions"* (p. 21).

5.2.3. Obstacles Limiting Increased Investments

The United Nations describes obstacles in relation to the redirection of investment to low-carbon energy systems in its *Emissions Gap Report* (2019). The need for more innovation in the sector and the lack of investments that are desperately needed to lower-income countries due to high risk are the main obstacles. The obstacles all follow the same main issue: developing countries need financial support to fulfil its climate goals. Steward et al. (2009) stated in their book *Climate Finance* that if developing countries do not reduce their GHG emissions, climate targets cannot be met. Regardless of the developed countries sharply reduce their GHG emissions (p. 4). The three authors are lawyers who have worked at NYU School of Law in the *Center for Environmental and Land Use Law* and the *Institute for International Law and Justice*, and previously in different legal entities such as *US Department of Justice* and *Environmental Defence Fund* (Stewart et al., 2009, p. xix). Their extensive background and the 35 additional experts on climate change, international investments, and sustainability that have contributed to writing the book, increases the book's credibility. The book writes extensively about climate finance to developing countries in 2009, but 10 years later, it seems that the issue remains (UNDP, 2019). This makes it clear

that the topic of how to establish incentives for private investors to support and finance climate-related projects in developing countries would benefit from further research.

Marcel Brinkman, an Associate Principal at McKinsey & Company and one of the contributors to the book *Climate Finance* (2009), wrote that the clear obstacle for private investors to enter developing countries is the high-risk environment (Stewart et al., 2009, p.135). He further states that developed countries offer greater investment security through efficient markets and secure investment processes, usually not found in developing countries (Stewart et al., 2009, p.135). Therefore, climate-related investments are mostly conducted in the middle- and high-income countries (UNDP, 2019). However, an important argument for investing in developing countries is the level of opportunities due to higher rates of economic growth and infrastructure development (Brinkman, 2009 referred to in Stewart et al., 2009, p.135).

5.3. DFIs Role in Foreign Direct Investment

There has in recent years been a growing interest in DFIs role in FDI, as policymakers face more complex challenges, including the newly adopted SDGs, climate targets and the ongoing crisis in fragile countries (Runde, 2014). According to Runde (2014), these new challenges mean that financial resources mobilized to support development need to be in trillions of dollars, not billions. DFIs have the ability to catalyze investments above and beyond their resources. Policymakers worldwide wish to support DFIs and deploy them to help fight global challenges (Runde, 2014). This is a likely reason why the total annual commitments by all DFIs have grown 600 percent in the years from 2002 to 2014 (Xu et al., 2019).

However, with the increase in DFIs investments, criticism has also grown. Two of the main questions raised by Runde (2014) concerns when a DFI invests in a struggling or low-income country, are they rewarding bad policy decisions by the government? Furthermore, why does the world need DFIs when private banks can provide financing in emerging markets?

In the article by Runde (2014), he reflects on the criticism and states, *"Each of these criticisms contains more than a grain of truth and reflects tensions fundamental to the missions of these organizations – tensions that can be managed but not "solved." In a world*

where private enterprise drives jobs and prosperity, DFI expands the frontiers of what is viewed as a profitable investment opportunity around the world". He describes how, based on other tools available and changing the world confronting policymakers, he expects DFIs to be utilized more, not less.

5.3.1. Market Failures

Xu et al. (2019) also mention that *"DFIs are potentially potent policy instruments for fixing market failures, incubating markets and promoting structural transformation"* (p. 6). The article states that DFIs can be the solution to fixing market failures. There are four common market failures, namely: information asymmetries, limited positive externalities, short-termism and, pro-cyclical lending, as seen in figure 6.

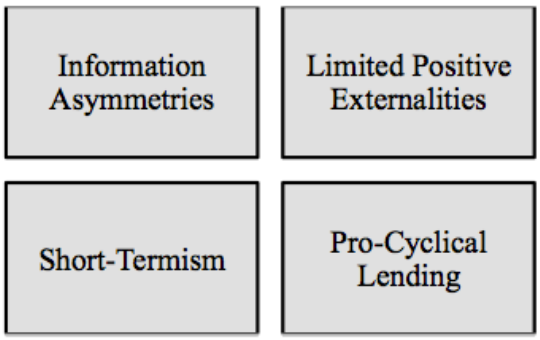


Figure 6: Overview of Market Failures (created by authors)

The first market failure is information asymmetries. Financial markets are exceptionally information-intensive, which leads to information asymmetries being a common market failure (Stiglitz, 1993 in Xu et al., 2019). It occurs when one member of economic activity has more knowledge than the other, giving the more knowledgeable an advantage (Bloomenthal, 2020). Banks are often faced with this obstacle, as they do not possess the same level of knowledge of the borrower. Therefore, they are not able to separate the potentially "good" from the "bad" borrowers (Xu et al., 2019). This has led to many SMEs not being able to receive loans even though they are "good" borrowers, as larger banks do not give loans to any SMEs (Xu et al., 2019).

The second market failure is the lack of positive externalities in private investments. As private actors are usually more focused on high financial returns, investments that would not

necessarily give the highest returns but a large amount of positive externalities are not committed (Xu et al., 2019). This is especially apparent in the climate change-related projects, as there is a large gap in what is needed and what is actually invested. Investments in climate change adaption and/or mitigation would lead to immense positive externalities (Xu et al., 2019).

The third market failure is short-termism. According to the article, *"capital markets often suffer from prevailing short-termism, leading to long-term financing supplies falling short of investment demands"* (Kay, 2012 in Xu et al., 2019, p. 7). This leads to the banking system tending to underinvest in long-term industrial finance, as longer-term projects often involve more extensive sunk cost requirements. Another reason why commercial banks are unable to provide long-term finance is their lack of specialized skills, which is required to deal with high-risk and long-term investments (Xu et al., 2019).

The fourth market failure common in the financial markets is pro-cyclical lending. Private investors and banks tend to expand their operations during periods of economic growth but will reduce investments and lending during recessions (Xu et al., 2019). The consequences are "boom-and-bust" cycles, which can destabilize long-term economic growth and macroeconomic stability (Xu et al., 2019).

5.3.2. DFIs Ability to Fix Market Failures

DFIs can have several different functions, which conclusively can fulfill a gap and fix market failures by supporting local businesses and open markets to global trade and investment, as DFI has the ability to catalyze investments beyond their resources with the support from policymakers worldwide.

Firstly, many DFIs have a specific mandate to help SMEs to receive loans and financial support. This minimizes the consequences of asymmetrical information in the financial market (Xu et al., 2019). They are able to do so, as they require lower financial returns or may take a higher risk than other financial institutions or private investors (Xu et al., 2019). Secondly, DFIs have a long-term view of their investments (XU et al., 2019). A luxury that

banks and private ivestors usually cannot afford. This also increases the ability of SMEs to receive financial support and limits short-termism.

Thirdly, DFIs have internalized positive externalities in their investment strategy, as they strive to achieve additionality and development effects (Xu et al., 2019). This is also relevant for positive externalities regarding climate change. For instance, the CDC group sees significant potential for DFIs to use patient capital to support new cleaner technologies in developing markets (CDC Group, n.d.). CDC recognizes investing in renewable energy as a critical part of their approach along with supporting the business from food and agriculture, via construction and real estate to healthcare to become climate-smart.

Finally, due to a long-term investment perspective and smaller financial return expectations, DFIs are able to invest counter-cyclical, which limits the "boom-and-bust" cycles. Empirical evidence has shown that DFIs continued to invest at the same level during the last global financial recession, proving their counter-cyclical strategy (de Luna-Martinez & Vincente, 2012 in Xu et al., 2019). There are signs that a similar effect is seen in the on-going COVID-19 crisis, including a number of initiatives to provide liquidity to hard-off African banks by some of the Nordic DFIs (Norfund, 2020b).

6. Case study: Norfund and the Clean Energy Department

Access to energy is regarded as one of the most important constraints to the development of business in low-income countries. Contributing to increased supply and access to stable, clean energy is, therefore, a key priority for DFIs. Around 600 million people lack access to electricity in Sub-Saharan Africa. Hence, clean, reliable, and affordable energy is essential for both business activity and job creation, and it helps mitigate climate change (Norfund, n.d.-b). Norfund's investments in clean energy contribute directly to the achievement of the Sustainable Development Goal no. 7 "*Ensure access to affordable, reliable, sustainable and modern energy for all"* (Norfund, n.d.-b).

The objective of the case study of Norfund's CE department is to gain a more comprehensive understanding of the CE department. This section will explain and clarify the elements influencing the CE department to obtain a better awareness of the different dynamics and components.

6.1. Description

The Norwegian parliament established Norfund in 1997 to contribute to economic growth and development in developing countries through investments in a variety of areas (Norfund, 2018b). Norfund joined EDFI in 2001. EDFI describes it as a company with a particular statute with limited liability, wholly-owned on behalf of the Norwegian government by the Ministry of Foreign Affairs (EDFI, n.d.-a).

Norfund's mandate is defined by the Norfund Act of 1997 (Norfund, n.d.-b). The act states that the purpose of Norfund *"is to assist in developing sustainable business and industry in developing countries by providing equity capital and other risk capital, or by furnishing loans or guarantees. The object is to establish viable, profitable undertakings that would not otherwise be initiated because of the high risk involved"* (Norfund, n.d.-b). Norfund is, by its mandate, obliged to only invest in countries on the OECD *DAC list of ODA Recipients*. In 2002 the two Norwegian state entities Statkraft and Norfund, joined forces to establish a hydropower company called SN Power that should concentrate its activities on developing countries and contribute to economic growth and sustainable development through these

investments. In September 2017, Norfund acquired Statkraft's share of SN Power and created the Norfund group, which consists of Norfund and SN Power AS (Norfund, 2018b).

In 2018, Norfund received NOK 1.69 billion in annual capital contribution from the Norwegian government. Norfund now has a total investment portfolio of NOK 22.3 billion, where SN Power accounts for NOK 7.4 billion of the total (Norfund, 2018a). According to Norfund's latest annual report, the Norfund portfolio delivered an estimated internal rate of return (IRR) of 10.5 per cent measured in NOK and 4.6 per cent measured in investment currencies (Norfund, 2018a). Norfund's business areas are clean energy, financial institutions and scalable enterprises. The most significant part of its portfolio is clean energy, which constitutes about half of the portfolio, as seen in figure 7 below. This thesis will mainly focus on Norfund's clean energy area. A more in-depth analysis of their clean energy portfolio follows below.

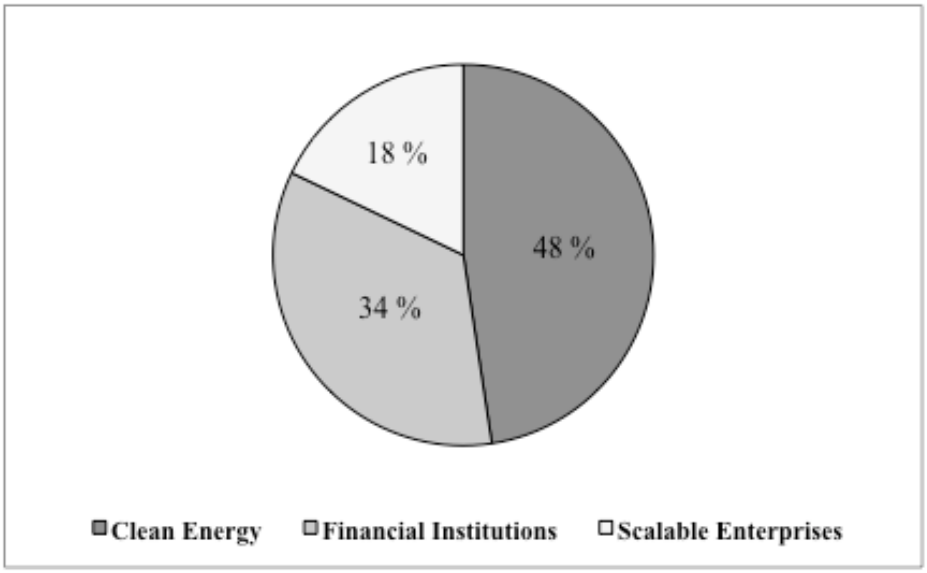


Figure 7: Norfund's Portfolio as of 31. December 2019 (Data from Norfund, n.d.-c)

6.2. Clean Energy Department

Norfund's clean energy portfolio comprises four different business models, *Grid-connected electricity supply, Off-grid electricity supply, Distributed generation and Captive power solutions* (Norfund, n.d.-a). The different business models enable the CE department to invest in different segments with the sector. According to its 2019-2022 strategy plan, Norfund's

ambitions is to grant 1.5 million new households with access to electricity by 2022 and to provide 4000MW renewable energy in new capacity by 2022. Norfund hopes to meet its ambitions by being an active minority investor that offer risk capital through equity, loans and funds to companies. In order to maximize commercial and developmental success, Norfund strives to be a value-adding owner that goes beyond capital investment. In 2019, 49.7 per cent of the CE department's investments wherein Sub-Saharan Africa, and most of the investments were medium- to large-scale, grid-connected power plants. These power plants typically involve hydropower, and wind and solar power (Norfund, n.d.-b). Until recently, hydropower dominated the energy portfolio. With increased competitiveness of solar and wind power, these accounts for an increasing portion of the portfolio. Considerably reduced costs of solar power can make it the cheapest source of new build in high irradiation conditions (Norfund, 2018b).

As already mentioned, the decreasing cost of establishing solar-power solutions drives an increase in solar investments. In 2018, Norfund sold 2.4 million solar-powered solutions to household clients in off-grid areas in Sub-Saharan Africa (Norfund, 2018b). Norfund has invested in approximately 1000MW of solar power with its partner Scatec Solar. Norfund has a long-term strategic cooperation with Scatec Solar and the partnership provides a collaborative framework for project development and joint investments in developing countries (Norfund, 2018b). Norfund and Scatec Solar's common objective is to contribute to increased implementation of renewable energy. The partnership has contributed to several solar projects in Africa and Central America and has contributed to over one GW built across five countries. Some of the highlights from 2019 include Mozambique's first large scale solar plant and 390 MW solar power plants in Egypt, which will be part of a 1.8 GW Benban solar park, Africa's largest solar park and one world's largest (Scatec Solar, 2019).

Wind power has also seen considerable cost reduction in recent years. Norfund is co-investing with CDC to fund the development and construction of the 310 MW Lake Turkana Wind Power (LTWP) park through the company Globaleq (CDC 70 per cent, Norfund 30 per cent) (Norfund, n.d.-b). Globaleq is the leading producer of gas, solar and wind power in Sub-Saharan Africa. Through Globeleq, Norfund, in cooperation with CDC, hopes to install

5,000 megawatts of new electricity capacity in Africa during the next decade (Norfund, 2018b).

The LTWP park is the largest wind project in Sub-Saharan Africa and contributes to approximately 17 per cent of the overall installed capacity in Kenya (Norfund, 2018b). In addition to constructing 365 wind turbines and high voltage stations, more than 200km of the road was upgraded to ensure the transportation of equipment to the site. In addition to providing the local community with electricity and new roads, the park alone has helped reduce GHG emissions in Kenya by closing down three fuel oil plants (Norfund, 2018b).

By investing in multiple segments of the clean energy sector, Norfund balances its investments and can provide stable and consistent electricity to local communities and societies. Norfund's objective going forward is to increase the supply of energy, the share of energy from renewable sources and the accessibility to energy. By doing so, Norfund directly contributes to achieving SDG targets 7.1 and 7.2, leading to economic growth, job creation and improved living standards.

6.3. Clean Energy Department's Stakeholders

Norfund is an active investor, investing internationally with the intention to be additional and create an impact (Norfund, n.d.-a). The company is through its investments affecting many different stakeholder groups. Its target countries often lack institutional frameworks. Hence multi-disciplinary approaches are very important (Norfund, 2016). To develop and build power plants in developing countries is complicated and often implies a high risk. This is why a successful project relies on partnerships and investment platforms, private investors, employees and cooperation with local governments and communities (Norfund, 2016). Consequently, the stakeholders will affect the realization of Norfund's CE investments.

By looking at each group carefully and understanding their interests, the CE department has the ability to create more value in multiple dimensions. This would increase the company's impact and development effect but also its own financial performance (Harrison & Wicks, 2013). Figure 8 states the CE department's stakeholders and divides them into voluntary and involuntary risk bearers.

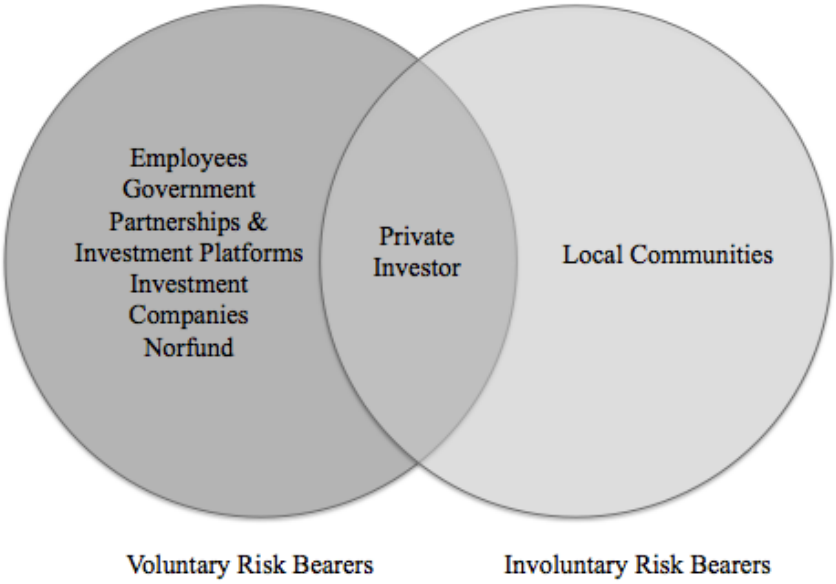


Figure 8: Voluntary- and Involuntary Risk Bearers (Created by Authors)

6.3.1. Employees

Norfund has Norway's largest specialist team investing in developing countries (Norfund, 2018b). Its employees are located in its headquarters in Oslo and in its regional offices in San Jose (Costa Rica), Cape Town (South Africa), Accra (Ghana), Nairobi (Kenya) and Bangkok (Thailand) (Norfund, 2018a).

Developing market continuously evolve since they are developing, and the situations investors face will change all the time. As a result, the company relies on recruiting employees in and from its target countries and regions, as it continuously has to build and develop expertise that is needed to invest and manage risk successfully (Norfund, 2018b). Without its specialised workforce, the company would not be able to operate successfully, which is why their employees are an important stakeholder group. The employees are voluntary risk bearers, as they have chosen to receive a salary and meaningful work from Norfund. The climate change effects are highly debated and most individuals, including the employees, have an opinion.

Through its climate-focused strategy, the CE department can engage the employees through a common goal, which they feel passionate about. The employees living and working in the

regional offices experience the effects of climate change first-hand. Their and their families' living conditions may be improved by helping to minimize the negative effects of climate change. Since Norfund relies on being able to keep its specialized workforce, giving them a common goal that can help them personally is important.

6.3.2. Government

Both the Norwegian government and the host governments of Norfund are important stakeholders to the CE department. Norfund is financed through an annual capital allocation from Norway's budget for development assistance and from financial returns from exited projects (Norfund, 2016). Norfund is growing significantly and is preparing for further expansion (Norfund, 2018b). However, its growth relies on continued support from the Norwegian government. Since 50 per cent of Norfund's portfolio should be invested in clean energy-related projects, the continued support depends on the CE department's ability to put its capital to work in suitable projects and its ability to be additional (Norfund, 2018b). Furthermore, the Norwegian government has an interest in fighting climate change in developing countries, since it signed the Paris Agreement, where it states that the western world will help these countries (United Nations, 2015b). The CE department may be able to receive more financial support by investing more climate-focused. The Norwegian government is a voluntary risk bearer as it relies on Norfund to be its representative in developing countries. Through Norfund, the Norwegian government is to show that they are making a difference.

Almost all independent power projects in developing countries are public-private partnerships. The host government is thus an important stakeholder for the CE department (Norfund, 2018b). The power sector remains dominated by state-owned utilities, which are typically the only purchaser of independent power. The CE department's projects need to be accepted and cooperated with the local government to be successful (Norfund, 2018b). Many governments in developing countries have experienced the effects climate change has on its country and inhabitants and are therefore very interested in renewable energy projects that can help minimize the effects. For instance, the president of Kenya, Kenyatta, has expressed that by 2020 Kenya will only use clean energy (Norfund, 2018b). Hence, local governments see the advantage of climate-friendly projects.

The local governments rely on the projects to receive affordable energy to its inhabitants and due to the taxes being contributed, making them a voluntary risk bearer. Private energy companies contribute to government revenues by paying corporate income tax and other fees (Norfund, 2018b). The taxes and fees are paid by the CE department's portfolio companies and by companies in their value chains. Only in 2018, Norfund's investment companies' taxes and fees amounted to NOK 13.9 billion (Norfund, 2018b). An increase in taxes enables the government to increase spending and therefore increase job creation.

6.3.3. Partnerships and Investment Platforms

When investing in a specific project, the CE department usually cooperates with partners such as other DFIs and/or private investors to make the best possible use of the invested capital (Norfund, 2018a).

In its energy portfolio investments, the projects co-investors provide the necessary expertise and technologies, and also offer professional guidance on the markets and operational environment (Norfund, 2020). As Norfund is a minority investor, they depend on strong, capable partners who share their values and goals (Norfund, 2018b). In the solar power sector, approx. 1000 MWp has been financed together with Scatec Solar ASA (Norfund, 2018b). Furthermore, Norfund has a 30 per cent stake in one of Africa's leading independent power companies, Globeleq (Norfund, 2018b). A partnership is only successful if the partners work together, which is why they are voluntary risk bearers. The partners are reliant on Norfund to provide local knowledge and financial support in these markets. Norfund carefully assesses potential partners before an investment can be made (Appendix 3). If the potential partner does not withhold the company's financial, operational, environmental and social standards, there will not be an investment (Norfund, 2018b). If the CE department has a more climate-focused strategy, its partners will become more climate-focused to be able to invest with Norfund, and the department would choose partners with a focus on renewable energy.

The CE department also has different investment platforms to be able to be a part of larger clean energy projects (Norfund, 2016). The Interact Climate Change Facility (ICCF) is

an investment vehicle targeting climate change mitigation projects, and finances renewable energy and energy efficiency projects in developing countries. ICCF has committed Euro 378 million in projects since 2010 and the CE department made its third investment in the facility in 2016 (Norfund, 2016). Such investment platforms are also dependent on investors, such as Norfund to be able to collect enough finances to conduct such projects. This dependency makes clean energy investment platforms also voluntary risk bearers. ICCF might receive more financial support from Norfund and its CE department with a more climate-focused strategy.

6.3.4. Investment Companies

Norfund often invests directly into an existing company, thereby making them a stakeholder. Norfund relies on the company to operate in a sustainable and efficient manner, in order to receive a satisfactory financial return and create a positive development also outside of the company operation. The investment company relies on its investors for financial support and is, therefore, a voluntary risk bearer. However, financial support is not the only effect of Norfund's investment. Norfund has the ability to co-fund company improvements and capacity development initiatives through its business schemes, which the investment company alone could not do (Norfund, 2018b). These include "*specific professional and technical assistance interventions such as occupational health and safety training, improved management information systems and initiatives to strengthen corporate governance and induce new policies or routines"* (Norfund, 2018b).

Furthermore, the company can ensure that the investment company has appropriate systems in place to identify environmental and social risks, minimizing their exposure to climate change-related issues (Norfund, 2018b). If the CE department, and Norfund as a whole, incorporates a more climate-focus strategy, it will have the ability to make more local companies' climate-friendly and resilient.

6.3.5. Local Communities

Norfund's mandate is to establish viable, profitable enterprises in developing countries that would not otherwise be initiated because of the high risk involved (Norfund, 2018b). Furthermore, large-scale investments such as clean energy projects are typically in remote and rural areas. Hence, cautious community engagement is needed to ensure that local stakeholder interests are being met (Norfund, 2018b). The local communities are involuntary risk bearers, as they have no direct link with the department but are still affected by the outcomes. In many low- and middle-income countries, electricity production relies mostly on fossil fuels, which emit large amounts of CO2. However, electricity generated from renewable sources can help to reduce CO2 emissions by displacing such as fossil fuels (Norfund, 2018b). In 2018, investment conducted by the CE department helped avoid CO2 emissions of 6 million tonnes, giving the local communities a more sustainable future (Norfund, 2018b). For instance, with the LTWP project, Norfund has successfully reduced GHG emissions in Kenya (Norfund, 2018b).

Furthermore, energy projects create both direct and indirect employment opportunities. Direct jobs occur in the construction and operational phases of a project. During the Lake Turkana Wind Power (LTWP) projects, more than 2500 people were employed, of whom 75 per cent were local residents (Norfund, 2018b). The indirect jobs are created by improving the supply of electricity and reducing the major constraint to enterprise growth (Norfund, 2018b). In developing countries, SMEs are particularly vulnerable to power outages and shortages (Norfund, 2016). In 2018, the total amount of energy capacity in Norfund's portfolio was 4100 MW of electricity, which is an amount equivalent to the combined energy consumption of Kenya, Uganda and Tanzania (Norfund, 2018b). Furthermore, wages paid to workers will positively impact the local economy. Purchasing local goods and services gives the local enterprises the possibility to grow and hire more workers (Norfund 2018b). Earlier research reports have shown that an increase in 10 per cent in DFI investments in lower-income countries leads to a 1.3 per cent increase in economic growth rate. This is especially significant in infrastructure investments (Norfund, 2020).

6.3.6. Norfund

Norfund is also a stakeholder and a voluntary risk bearer for the CE department. When Norfund decided that renewable energy investment should, over time, be no less than 50 per cent of the company's portfolio, the CE department received more financial support (Norfund, 2018b). This is highlighted due to the fact that Norfund is growing as an institution and is preparing for further expansion in the future (Norfund, 2018b). This will give more financial support to the department. However, this also creates a dependency between the company and its departments. If the company wants to grow and have 50 per cent in clean energy, then the CE department needs to come up with successful projects. Furthermore, Norfund's Investment Committee (IC) decides on the larger investments that are being conducted, usually investments between USD 4 to 15 million. The individual management teams can only decide on investment up to US$ 4 million (Norfund, 2018b). Hence, for the CE department to be able to conduct the larger scale investments that are needed to fight climate change, it needs the support of the entire company and the IC.

6.3.7. Private Investors

One of the main objectives for Norfund is to be catalytic and the CE department is, therefore, also reliant on private investors. If Norfund should be able to exit a project after 10 years, there need to be private investors to take over. Since private investors who allocate funds to developing countries may access attractive growth opportunities and attain a risk diversification in their portfolio, such investments are attractive (Norfund, 2020). However, private investors are risk-averse (Norfund, 2016). They need investors, such as Norfund to enter the market and show them the opportunities that are there. For instance, the Lake Turkana Wind Power project has been used as an example for a successful project and now has more international investors looking to invest, for example, Google (Norfund, 2018b). Norfund's geographical focus allows it to build familiarity with local business environments, enterprises and politics, which is extremely important for private investors. The private investor that directly invest with Norfund or a project Norfund has financed are voluntary risk bearers. However, the private investors who benefit from Norfund's investments but are not directly linked to the company are involuntary risk bearers.

6.4. Investment Level Analysis

The academic and empirical data collected highlighted the need for increased investment in clean energy. Norfund has the intention to allocate 50 per cent of its total portfolio in clean energy projects and are doing so today. However, in 2018 only 27 per cent of its financial commitments were in the clean energy sector (Norfund, 2018b). To understand the CE department's level of investment, the model created by Wüstenhagen and Menichetti (2011) will also be used to analyse the energy policies, risk and return effecting Norfund's clean energy investments. Since Norfund has main focus is on Africa, the national energy policy analysis will focus on the core countries within Africa, where it has active clean energy investments (Norfund, n.d.-a).

6.4.1 Energy Policy

As stated previously, global climate targets affect energy policies. Hence, the CE department investment level will be influenced by international and national policies. Even though the international policies described are not legally binding, their missions are seen as important by the nations who have signed the agreement. Hence, international policies are frameworks affecting national energy policies.

6.4.1.1. International Energy Policies

The SDGs and the Paris Agreement are global policies that have an influence on the CE department's investment level, as the African governments where the department has invested have signed the agreements. Under SDG 7, there are specific clean energy targets that the African nations need to meet to be able to reach the goal and upholding their contribution to achieving the SDGs by 2030. Under the Paris Agreement, each country has stated its Intended Nationally Determined Contribution (INDCs) to help achieve the goal of keeping global warming under 2°C (Carcia, Leidreiter, Fünfgelt, Mwanga & Onditi, 2017). Therefore, the African governments have created their own renewable energy policies to meet the targets under SDG 7 and its INDCs. Furthermore, the increased focus on the clean energy sector receives by being one of the main solutions for a sustainable future is also favourable for the department. It creates more mainstream knowledge and interest in investment by the private sector. The international policies create demand by national governments and supply

by private investors, and hence the department can be the bridge between the sectors and increase overall investment level.

AREI also has an impact on the CE department investment level. All the African governments are required to present nationally determined plans to achieve the proposed transformation to a low-carbon energy sector, stating that they wish to increase the investment level in the sector (Carcia et al., 2017).

6.4.1.2. National Energy Policies

The CE department's core countries have national energy policies, often in favour of renewable energy. Uganda has the Renewable Energy Policy, which pursues to diversify the source of the nation's energy supply and increase technology innovation (World Bank, 2017a). An important element of the policy is the Stakeholder Participation and the Poor. It encourages the local communities to participate in clean energy projects and encourages that these projects should include the poor (World Bank, 2017a). These policy elements are helpful for the CE department. Hence, it increases the development and the additionality effect of the investments. The Ivory Coast has a similar energy policy called the National Renewable Energy Action Plan, which also aims at increasing the share of clean energy in the nation's energy supply source (Marks, 2020a). In Nigeria, the National and Renewable Energy and Energy Efficiency Policy (NREEEP) states various policies to increase clean energy technologies in the country (Dioha, 2018). However, the lack of infrastructure in the Nigerian power sector today creates a barrier to achieving these policies. Favourably to the policy, there is a political agenda to increase private investment to minimize the infrastructure gap (Dioha, 2018). This creates opportunities for the CE department. Having a willing government can minimize the bureaucratic process and give favourable financial terms.

In 2010, Ghana created the National Energy Policy to increase energy supply for the nation's increasing need for energy, which has stopped the country's further development (IEA, 2014). The policy's main focus is not renewable energy only, but it states that the country needs to attain an efficient and sustainable generation of energy (IEA, 2014). The policy also states the need for private investment to do so, giving many opportunities for the CE department. There is a demand for clean energy in Ghana, and private capital needs to

come in to make it happen, as they are not able to finance it themselves. Hence, the opportunity can mobilise private investors.

Credit risk is a main risk facing investors when investing in developing countries (Appendix 7). Zambia has now chosen to help minimize credit risk for private investors by allowing intermediary off-takers for Independent Power Producers (IPPs) (Marks, 2020a). The intermediary off-taker will operate between Zesco, the state-owned power company, and the IPPs. This will lead to minimized credit risks for banks as it offers risk mitigation and gives them the right to sell the power generated somewhere else if Zesco is not able to pay for the energy (Marks, 2020a).[9] Furthermore, allowing an intermediary off-taker will increase efficiency and reduce tariffs. Most governments in Africa do not have enough capital, and as the government usually runs power companies, this is a reoccurring risk for private investors. The ability to improve the liquidity in regional electricity markets would help attract more private capital. As Zambia is striving to do so, this is a great benefit for the CE department and will increase the return in terms of financial, developmental effect and additionality.

The risk of governments not being able to pay IPPs for the generated energy is a recurring risk and even the most developed countries in Africa are not able to minimize it. South Africa has been struggling with an energy shortage, blackouts, brownouts and load shedding and will have to limit access to energy during the winter of 2020 (Marks, 2020b). The urgently needed policies that could have increased the energy supply were faced with bureaucratic hurdles. Adding South Africa's bad sovereign debt rating and the high level of overall debt, which may stop the government from providing payment guarantees for IPPs, have reduced private investors' interest (Marks, 2020b). The increased risk will require a higher return for a private investor to enter South Africa, but a high return is far from guaranteed.

Political risk is also a recurring risk for private investors, especially in developing countries, where they lack institutional frameworks. Tanzania has decreased its political risk by showing consistent and adaptive energy policy. In 1992, the National Energy Policy (NEP) was created to increase access and efficiency of its energy sources (Carcia et al., 2017). In

[9] While these plans are encouraging, Zambia is a heavily indebted country depending on commodities export. The current COVID-19 crisis has brought global prices of the key commodity, copper, down by 25 per cent. The funding of this scheme will, therefore, be challenging (The Economist, 2020)

2003, the NEP was improved and started focusing on market mechanisms that would help balance the national and private interests, as the country realized its need for private investment. And in 2015, the NEP was again improved to highlight the need for clean energy, as the country wanted to give efficient and reliable energy sources for the present and the future population (Carcia et al., 2017). Tanzania's consistency in its NEP exhibits its wishes to improve the national energy sector to increase economic and social development. Consistency minimizes political risk for private investors, as it shows the NEP will most probably have drastic changes that can affect them in the future. Hence, by minimizing the risk, the CE department will have the opportunity to mobilise more private investment to the country.

6.4.2 Risk

Any investment entails risk. Any investor seeks to mitigate these risks, and to the extent, they cannot be controlled, the risk is reflected in a higher required return. When investing in developing countries, there are additional risks, actual and perceived. For the clean energy sector, three main types of risk have been highlighted as more common. These are project, -policy- and financial risk. Hence, the risk analysis will include these three types of risk on the active investments of the CE department. These risks are also interrelated, i.e., high project risks may lead to higher financial and political risks as well, and so on.

6.4.2.1. Project Risk

One of the most significant risks the department faces is to find investment projects that are bankable (Appendix 3 & 5). This means projects that are ready for significant capital investment and are able to be scaled up to increase the financial return a private investor is looking for. The smaller clean energy projects, which often focus on climate change adaption, are usually not large enough for the bigger DFIs. Even though DFIs do not need a significant return, the project must still generate a positive return. To face this issue, Norfund has started its own Greenfield fund to help smaller projects become bankable. However, these projects are very risky, as it is very early in their development phase. Finding the right Greenfield project to invest in is, therefore, challenging.

The CE department's stakeholders can be a risk to investment projects. Most of the stakeholders are voluntary risk bearers, where the risk is shared between the department and the stakeholder. Since the voluntary risk bearers are interested in the success of the project, the intentional risk caused by these stakeholders is minimized for the department. However, the involuntary risk bearers, namely the local communities and private investors not directly linked to the investment project, can create a lot of risk. For the CE department, this can be damage risk to the property or equipment on the project, protests delaying production, or not being able to find sufficient funding from private investors.

The national governments in the core countries are voluntary risk bearers when the project has been approved. However, due to the weak institutional frameworks, the risk facing an investor is still high. For instance, poor integrity may delay its projects due to disagreements or a new government being set in place as a result of a corruption scandal. Furthermore, the governments usually own the national energy company that may often be the sole off-taker of energy from the CE department's investments. As they are often highly indebted and do not have capital themselves, the risk of them defaulting on the expected payments is high. This may lead to the project going bankrupt as no one is paying its generated energy.

6.4.2.2. Political Risk

Due to the weak institutional framework in the department's core investment countries, the political risk is high. The uncertainty surrounding the reliability and credibility of policies and the government enforcing them are often increased by frequent policy-reversals and inconsistencies in emissions data. Governments can put in place a renewable energy plan to show their neighbouring countries and the rest of the world they are taking the climate targets seriously, but then not following through. This is especially likely in the core countries with high levels of integrity issues.

Integrity is the source of many risks, especially political risk. For instance, policies introduced by a government can be changed due to corrupt government bodies or not be followed at all due to corruption in the energy sector. 73 per cent of the CE department's core countries have been categorised as "very hard" or "hard" to do business in by the World Bank "Doing Business" index (table 5). Incorporated into the index is the level of corruption, indicating that

the harder it is to do business, the more corruption there is in the country. Hence, the department has a high political risk due to integrity issues in its core geographies.

6.4.2.3. Financial Risk

Credit risk is always present and requires close scrutiny by the CE department (Appendix 7) Credit risk is defined as the probability of a loss consequential of a borrower's failure to repay a loan (Labarre, 2019). The CE department finances companies building or distributing power plants and needs to assess the creditworthiness of these entities. Furthermore, it is also exposed to accounts payable risks. This is the risk of off-takers or customers not being able to pay in time or at all. The department is investing in scarce capital countries and will, therefore, be highly exposed to non-payments and arrears building.

6.4.3. Return

The CE department seeks a financial return, additionality and developmental effect in its investments. Hence, the three different types of returns will be analysed using the same tools Norfund uses on the department's existing investments. The financial return is calculated using the Internal Rate of Return (IRR), which is a discount rate that makes the net present value of the company's cash flows from a specific investment equal to zero (Hayes, 2019). The higher the IRR, the more attractive the investment is (Hayes, 2019). The additionality return will be analysed using Norfund's Additionality Framework and Goals on the core countries in Africa with active investments (Appendix 11). The development effect return will be analysed using the development goals asset by Norfund, which will be described later (Norfund, 2018b).

6.4.3.1. Financial Return

The CE department's IRR has varied over time, averaging an IRR of 7 per cent in the period between 1997-2018 (Appendix 12). In 2018, the IRR was 7 per cent. The CE department's IRR varies due to entering or exiting an investment, as this creates cash flowing in or out of the fund. Having an overall IRR of 7 per cent is acceptable, given the Norfund target of an IRR above 5 per cent (interview).

The CE department's investment in Africa has achieved high IRRs. In 2018, the CE department exited an investment which Scatec Solar as a partner. The partnership was established in 2013, and the project comprised three solar photovoltaic system plants in South Africa with a capacity of 200 MW (Appendix 13). The initial equity investment was ZAR 230 million, with additional distribution[10] of ZAR 230 million. The department exited the project at an equity value of ZAR 650 million. This represented a 14 per cent IRR or ZAR 250 million over five years. Had this been the case for every investment the CE department had made, its overall IRR would be higher. However, African countries represent a risk, some investments do not achieve the same investment return. Nevertheless, it does still provide enough overall IRR to continue to create sufficient financial return and hence increase Norfund's total equity that can be redeployed in other projects.

6.4.3.2. Additionality

Norfund's additionality goals are: *"investing in the poorest countries, investing in capital constrained markets, investing in risky markets, investing in difficult business environments, providing scarce capital, contributing to starting new business activities and mobilising private investment"* (Appendix 11).

Country	ODA Category	Domestic Credit	Credit Rating	Doing Business
Angola	LDC	Very low	B-	Very hard
Ethiopia	LDC	Very low	B	Very hard
Malawi	LDC	Very low	-	Hard
Mozambique	LDC	Very low	D	Hard
Tanzania	LDC	Very low	-	Hard
Uganda	LDC	Very low	B	Hard
Zambia	LDC	Very low	CCC+	Medium
Ghana	LMIC	Very low	B-	Hard
Lesotho	LDC	Very low	BB-	Hard
Nigeria	LMIC	Very low	B	Hard
Rwanda	LDC	Very low	B+	Easy
Senegal	LDC	Low	B+	Hard
Ivory Coast	LMIC	Low	-	Hard
Kenya	LMIC	Low	B+	Medium
South Africa	UMIC	High	BB	Medium

Table 5: Additionality Scores (created by authors, data retrieved from Appendix 14)

[10] Distribution can i.a. be: interest payments, dividends or repayment of shareholder loan

By looking at table 5, the OECD's ODA Category scores ten core countries as Least Developed Countries (LDC), four as Lower Middle-Income Countries (LMIC) and one as Upper Middle-Income Countries (UMIC). In other words, 67 per cent of its active investments are in the poorest countries.

The level of investment in capital-constrained markets is analysed by looking at the domestic credit to the private sector, which refers to the financial resources provided to the private sector by financial corporations as a percentage of GDP and is an indicator of the level of financing available in the domestic markets (Appendix 11). Eleven core countries are categorised as very low (less than 25 per cent of GDP), three are low (between 26 and 50 per cent of GDP) and one is high (more than 75 per cent of GDP) (table 5). This means that 73 per cent of its active investments are in very capital constrained markets.

The level of risk in the market is examined with the country's credit rating, which indicates the level of risk associated with the investment environment (Appendix 11). The countries where the CE department invests have credit ratings of B+ or worse, indicating that the markets are high risk (table 5). Some of the countries do not have any official credit rating since the market is too difficult to assess.

The Ease of Doing Business indicator is used to assess the quality of the business environment (Appendix 11). The Ease of Doing Business index has assessed the absolute level of regulatory performance detected on every indicator across all economies in the "Doing Business" sample (World Bank, n.d.). Two of the core countries are described as having a very hard business environment, and nine are defined as hard (table 5). This means that 73 per cent of the CE department's investments are in either a very hard or a hard business environment.

The CE department also wants to provide to countries where the supply of capital is scarce. As stated, developing countries are in need of increased private investment to be able to attain and generate sustainable energy for their growing population. The national governments cannot provide the necessary capital. The indicator of capital constrained markets in table 5 shows that 73 per cent of the core markets only have 25 per cent or less of the total GDP of

financial resources provided by the private sector. This highlights that the public sector cannot provide capital and the private sector is not willing to do so. Hence, the CE department is providing scarce capital to at least 73 per cent of its investment markets, if not more.

Norfund also wants to contribute to starting a new business activity. This is especially important for the CE department, as one of the biggest challenges is the lack of attractive projects to invest in. Norfund has started its own Greenfield fund, which is used to help finance projects in the very early stage (Appendix 11). This fund is available for every department in Norfund. Hence, the CE department has the opportunity to contribute to starting new business activities.

The last additionality goal is mobilising private investors. The investment projects that are exited are typically taken over by private investors who have taken over the project. A number of projects are started in partnership with private investors. For instance, the Lake Turkana Wind Power project was started with other DFIs and Vestas, a Danish technology supplier. Today, companies such as Google are looking to invest in the project. This indicates that the work the department does is mobilising private investors into the clean energy sector to its core countries. However, the exact mobilisation effect is difficult to assess as the CE department's investments may have an effect on projects not directly related to its own investment projects. An important part of what the DFIs do is showing that it is possible to create a return in these difficult markets, which hopefully inspires other private investors to do the same.

6.4.3.3. Developmental Effect

There are five development effects that the CE department directly contributes to, namely increasing the supply of energy, the share of energy from renewable sources, access to energy, job creation and tax revenue (Norfund, 2018b). In 2018, the clean energy portfolio had 30 active power plants that totalled an energy capacity of 4100 MW. Out of this, 2800 or 68 per cent of the total portfolio was from renewable energy sources (Norfund, 2018b). The power plants produced a total of 17.4 TWh of electricity in total. This increased the total energy supply of the countries in which they invested.

As 64 per cent of its energy investments are in Sub-Saharan Africa, it helped the poorest nations increase their energy supply, which they drastically need due to the population growth (Norfund, 2018b). Furthermore, 40 per cent of the investments were located in the Least Developed Countries (LDC). Also, as most of the energy generated was from renewable sources, it prevented 6 million tonnes of CO2 emissions compared to the standard national grid emissions (Norfund, 2018b). The department also sold 2.4 million units of solar-powered solutions directly to household clients, thereby increasing the access to energy as well (Norfund, 2018b). Finally, the portfolio companies include 18 800 jobs, and in total, they have paid NOK 2 700 million in taxes, leading to increase in job creation and tax revenue to the national governments (Norfund, 2018b).

6.4.4. Investment Level

The CE department's investment level is positively affected by international and national energy policies, due to the increase in demand for clean energy. However, due to political risks because of weak institutional framework and corruption, the positive effect is not always experienced. Furthermore, financial and project risks make it difficult to find projects to invest in and being able to find sufficient capital to finance them if they are found. Hence, the investment level in 2018 was 26 per cent of Norfund's overall financial commitments. However, if the department is able to find a bankable project, the financial return, additionality and developmental effects tend to be good.

6.5. Internal and External Analysis: SWOT

The SWOT analysis of Norfund's CE department is conducted by looking at a broad spectrum of relevant factors, which all influence the department in some way or another. During the case study of the department, the internal situation, as well as the external environment, were presented. The result showed different aspects as responsibilities, stakeholders and sustainable energy development goals, all influencing the CE department's investment strategy.

The findings of the conducted analysis are summed up in the SWOT matrix 1 shown below.

	Helpful	Harmful
Internal	**Strengths:** • Sector knowledge • Market knowledge • Voluntary risk bearers • Access to investment capital	**Weaknesses:** • Strict mandate • Relying on partnerships • Limited human resources
External	**Opportunities:** • High growth rates • Demand for clean energy • Suitable climate for clean energy • Technological innovations	**Threats:** • Risk: project, policy and financial • Lack of bankable projects

Matrix 1: SWOT Analysis (created by authors)

6.5.1. Strengths

The presented strengths in the matrix above indicate that the department has excellent knowledge of the clean energy sector and the market they invest in, mainly in the least developed countries and Sub-Saharan Africa. It is reasonable to conclude that the department has gained exceptional know-how in the clean energy sector and market insight with more than 20 years experience investing in developing countries. Along with Norfund's aims to continuously build and develop the expertise needed to invest and manage risks.

Another strength is that the CE department is a voluntary risk bearer as Norfund's mandate is to establish viable, profitable enterprises in developing countries that would not otherwise be initiated because of the high risk involved. The last strengths are highlighted in the empirical data as it was pointed out that a large amount of investment capital is available and is most likely to increase due to an increasing focus on climate change and clean energy.

6.5.2. Weaknesses

The CE department is, by its mandate, strictly obliged to only invest in countries classified by the OECD as lower-middle-income countries along with a zero-tolerance policy on corruption. Lower-middle-income countries have historically contributed little to greenhouse gas emissions while developing countries like India [11] are identified as one of the highest overall emitters. The mandate is, therefore, viewed as a weakness as it can shrink the window of opportunity when investing in clean energy. The department is relying on partnerships that can be difficult to get. Norfund is a minority investor and depends on reliable, capable partners who share its values and goals.

The department always assesses potential partners before an investment can be made. If the potential partner does not meet acceptable financial, operational, environmental and social standards, a partnership will not be created. Limited human resources are viewed as a weakness due to the size of the department and the belief that more employees would increase the department's number of experts in specific areas and thereby expand the number of investments.

6.5.3. Opportunities

Developing countries are experiencing the most significant growth rates today, and it is expected that they need a substantial increase in energy capacity. It is a proven fact that an increase in development growth and human prosperity leads to rising demand for efficient, secure and stable energy. With the growth comes a rising need for ensuring that the energy is obtained and used responsibly with low or minimal impact on the climate. Therefore, it seems reasonable to conclude that the clean energy sector will continue to see substantial growth and it makes it necessary to continually reform the energy sector to meet the demand for clean energy.

The increase in technological innovations will further this growth, as the cost of clean energy is decreasing, making it more profitable to invest in clean energy projects. Furthermore, innovative integration of reliable technology has made the energy source

[11] Clean energy projects in India, however, are outside Norfund's mandate

cheaper and more reliable, which reduces the costs of clean energy making new projects economically competitive against fossil fuel.

The growth opportunities, demand for clean energy, technologically innovation and a suitable climate for clean energy, many developing countries have provided the CE department with a spectrum of opportunities.

6.5.4. Threats

There are a wide range of threats associated with investing in developing countries and a niche sector, such as clean energy. One of the most critical threats to address are the risks that affect the level of investment in the sector. The analysis points to project, political and financial risk as being the most critical aspects of risk. The risks are interlinked, meaning that an increase in one of them, consequently, will lead to an increase of risk in other areas.

Project risk refers to the underlying market barriers in developing countries due to potentially weak funding of off-takers, poorly developed energy mandates, and intermittency of the energy sources. The high pressure for advancement and funding, along with a decrease in the cost of energy technology, leads to high project risk for investors as it is challenging to find attractive projects.

Another dimension of the risk is the political risks of the different governments. Political induced risks are often associated with weak institutional systems and corruption. Financial risk is often associated with developing countries as they are under-capitalized. Clean energy investments are often reliant on public policies as financial de-risking is usually associated with risk transfer from the private investor to the public sector.

In addition to the already mentioned threats, comes a lack of bankable projects. The primary data pointed at the threat of not finding bankable projects, suggesting that it is hard to scale projects to increase the financial return. The lack of bankable projects is connected to the threat of limited projects available as the smaller clean energy projects, which often focus on climate change adaption, are usually not large enough to scale and thereby minimize risk. A limited number of projects available for the CE department to invest in, therefore, poses a risk

as it challenges Norfund to invest in greenfield projects, which is associated with more significant risk.

The SWOT matrix presents the most critical internal and external factors impacting the CE department, and the section provides the reader with a clear understanding of each factor. The SWOT is, as mentioned, used as a summarizing tool and does not provide the necessary action to ratify strategic change (Gürel & Tat, 2017). Instead, it constitutes the foundation for further discussion. Moving forward, the paper seeks to build on the strengths, eliminate the weaknesses, exploit the opportunities and mitigate the effects of threat.

7. Discussion

By using Norfund's CE department as a case study, we have specified some of the internal and external factors, providing valuable information for modifications of the company's investment strategies considering the stringent climate targets. Even though the external opportunities and internal strengths look promising, Norfund should be careful proceeding with business as usual, if they wish to have the most positive impact on development. The paper, therefore, proceeds with a discussion, and consequently answering the sub-question and research question, for Norfund to the most advantage of their strengths and exploit their opportunities.

Ultimately, the objective is to determine how DFIs can modify their energy investment strategies considering stringent climate targets, using the theoretical framework and the knowledge gained from the case study.

7.1. What are the climate targets, and why are they becoming more stringent?

7.1.1. Climate Targets

As climate change is already happening and its effects appear to become more severe going forward, the need for action is urgent. The required fundamental reforms and immediate measures are reflected in multiple multi-national agreements. Most countries have prioritized establishing global climate targets.

The Paris Agreement is probably the most influential accord. A large number of countries have signed up to it, and it provides a global framework for how to avoid a potentially dangerous climate change. The Paris agreement was the first legally binding universal climate agreement, creating a bridge between today's policies and climate-neutrality before the end of the century. Some of the components many governments agreed upon were *long term temperature goal, mitigation reduced emissions, transparency and adaption* (European-Commission, n.d.-b). The most significant but also most debated was the long-term goal of keeping the increase in global average temperature below 2°C. To further discuss the goal and its components, it is typically divided into two: scientific and political.

On the scientific side, the consensus that the increase in the planet's average temperature is primarily driven by the increased carbon dioxide and other human-made emissions into the atmosphere is well established. However, when discussing a specific goal, there may be several opinions. Scientifically, it is debated that there are better ways to measure the strain humanity is placing on the climate system than the increase in average global temperatures.

Critics believe that there was little scientific evidence for the 2°C goal to be adopted. Instead, it merely offered a focal point that was familiar and feasible to governments and organizations like the IPCC. The failure to set scientifically meaningful goals can have significant consequences as it makes it harder for scientists and politicians to justify how substantial investments in climate-related projects can deliver tangible results. Scientists have also doubted the efficiency of the target based on the difficulties of establishing a target in a global context with various uncertainties about climate sensitivity. This opinion finds support in an article by Victor and Kennel (2014), were the climate target is described as: "*the goal is effectively unachievable. Owing to continued failures to mitigate emissions globally, rising emissions are on track to blow through this limit eventually"* (p. 1).

The article also describes a vast critical point as it suggests that governments can ignore the need for massive adaptation to climate change due to *"pretending that they are chasing this unattainable goal"* (Victor & Kennel, 2014, p. 5). Critics, therefore, suggests that new goals are needed, which are better rooted in the scientific understanding of climate drivers and risks.

Based on scientific criticism, the targets should include tracking on an array of vital planetary signs, for example, the changes in the ocean heat content. Furthermore, the scientist believes the targets should set specific terms, including the many individual gasses emitted by human activities and set policies to mitigate these emissions, instead of only focusing on GHG emission.

Some criticism focuses on policymakers being too interested in the cost of mitigation, but less interested in the costs of avoided damages. In other words, critics define the problem of climate policy as one of assessing the risks of climate change rather than addressing the issue. This vital consideration, as it reframes the policy advice to focus on what are "tolerable"

climatic changes instead of focusing on actions to reduce the effects of climate change. Secondly, economists have critiqued the 2-degree target for being too costly and based on insufficiently clear damage cost (Tol, 2007), describing the official documents justify the target as *"inadequate, reasoning sloppy, citations selective and the overall argumentation rather thin"* (Tol, 2007, p. 7). They argue that the target should be an aspiration to strive for rather than a goal that has to be met. Thirdly, some researchers have criticized the target for forcing a slightly "*tenuous policy debate that has detracted from the process of reducing emissions*" (Tol, 2007, p. 5)

Therefore, on the political side, transitioning away from a fossil fuel-based economy is a substantial adjustment, but a necessary one, if the 2-degree target is to be met. Ultimately, to succeed, climate change actions and clean energy transactions must be planned and accelerated by the policymakers willing to do so. Regardless of the criticism, the Paris agreement has contributed to making climate change a widely discussed subject. Scientists, politicians, economists and ordinary people might disagree with the agreed climate targets, but the Paris Agreement has provided a concrete goal for governments and policies to aim for. Some critics do, however, believe that the Paris Agreement only reflects a willingness to address the problems, without taking into consideration that policymakers are unwilling to take the necessary actions.

Climate change is affecting every country on every continent. It is disrupting national economies and affecting the global population. Therefore, it is inevitably connected to the SDGs, as people living in poverty also are the most vulnerable to the effects. Climate change is consequently more than just one of the 17 SDGs specified to it. Not only is climate change ranked as the SDG with the highest importance, but it is also a "threat multiplier" with the potential to worsen some of humanity's most significant challenges: poverty, hunger, and health (UN News, 2019).

Multilateral organizations such as the UN, the AU and the EU have all based their guidelines on the Paris Agreement and the SDGs, including additional frameworks to ensure progress towards a climate-neutral economy, which has led to more stringent the climate targets.

7.1.2. Scientific Research that Lead to More Stringent Targets

Climate targets are becoming more stringent due to scientific and political pressures. It is, however, the scientific research that has led to the increased political attention. Hence, the scientific results from acknowledged reports are a crucial reason for stringent targets.

The Emissions Gap Report provides a science-based assessment of the gap between countries' pledges on GHG emission reductions and what the reductions require published by the UN Environment Programme. Here it is found that the world is not doing enough, based on the fact that GHG emissions have only risen, hitting a new high of 55,3 Gt of CO2 equivalents (GtCO2e) in 2018. GHG emissions have risen 1,5 per cent per year in the last decade. By 2030, the emissions would need to be reduced to 25 Gt, which is 55 per cent lower than the level in 2018 in order to put the world on the least-cost pathway to limit global warming to between 2°C and 1.5°C. With the current policies, GHG emissions are estimated to be 60 GtCO2 in 2030. With the least-cost pathway towards the Paris Agreement goals in 2030, median estimates are 41 GtCO2e for 2°C and 25 GtCO2e for 1,5°C (UNDP, 2019). The dire consequences of inactivity, which is backed by record temperatures and extreme weather events worldwide, have led to an increased focus on the climate target.

The NDCs supplement the increased focus on climate targets as we reach the five-year milestone of the Paris agreement. According to the report *"The heat is on"* (Doyle, 2019), the NDCs plays a crucial role as nations are obligated by the Paris agreement to toughen their NDCs every five years. The obligation will affect the climate target by building momentum and assuring that key actors are aligning their plans, policies, and projects with climate targets. The report also emphasizes that climate change is already disrupting national economies and affecting lives, especially the poorer part of the global population. Poverty eradication and sustainable development goals cannot be met unless there is a collective push to address climate change. Therefore, the five-year milestone of the Paris agreement and the obligation it entails will contribute to an increased focus on climate targets. Nations should then feel obligated to toughen their ambitions in order to reach net-zero CO2 emission by 2050.

The interlink between climate change and a disproportionate impact on the poorest additionally puts pressure on developed countries to toughen their climate targets. One of the most influential institutions is the IPCC, which has helped create visibility in the public space as an authoritative voice on these issues. The IPCC has had a significant role in the public discourse of climate change and -policy, and the universal acceptance of these, regardless of some scientific and factual disagreements. IPCC is set to publish its next report in 2022, and it is expected to enhance the focus on climate change and pressure on nations to toughen their climate targets further.

7.1.1. Sub-Conclusion

Scientists, political representatives, and societies around the world have recognized climate change as a ecological and humanitarian threat. Multiple national agreements have increased public focus, and the recognition of various hazards associated with climate change have contributed to more stringent climate targets. The section below seeks to discuss what effect these stringent climate targets have on a DFI's investment strategy.

7.2. What effect do climate targets have on DFIs investment strategies?

Climate targets are a consequence of the acknowledgement of the increased impact climate change has on the environment. With increased awareness of the consequences of climate change on humanity and its environment, stakeholder engagement to limit these consequences has increased. As DFIs are reliant on its stakeholders to conduct investments in developing countries and to achieve their investment goals, stakeholders' attitude and preferences are important.

As the DFIs share the same mandate and goals, most of the CE department's stakeholders are equally important for every DFI. Employees, local and host governments, local communities, partnerships and investment, platforms, investees, and private investors are all important stakeholders. These must be incorporated into their strategies. Hence, the increased pressure from stakeholders to reach the climate targets is putting pressure on DFIs to have a more climate-focused agenda. The SWOT shows that one of the strengths of the CE department is its deep sector and market knowledge. This insight has been developed over the years by its

staff at the headquarters, and in its subsidiaries and keeping them is therefore important. Well-educated and experienced employees can shift jobs more easily, should their interests not be taken into account. Hence, following the employees' interest in being climate-focused is essential. The empirical data shows that the employees at Norfund and other European DFIs are aware of the importance of being increasingly climate-focused. This is also relevant for the partnerships the CE department depends on. The empirical data also highlights that other DFIs are reliant on partnerships to be able to conduct investments. When more partners become climate-focused, the DFIs need to follow to be able to develop these partnerships.

Having a more climate-focused investment strategy might change their investment mandates. DFIs strategies are a reflection of why they invest. They invest in poor countries to improve future prospects for the population. By switching investment focus from sole development to a focus on how climate affects development may change investment priorities. Having a climate focus means having a stronger macro-focus on investments. Climate change is a global issue and the effects are most prone in developing countries, even though the developed countries are the main producer of GHG emissions.

A change in investment focus from purely poverty reduction to a more general goal of increasing the global living standards by helping to bridge the gap between the public and the private sector could open up for additional investment strategies. That would increase the positive ripple effect of a climate change mitigation investment. For example, Norfund's CE department focuses on investing in Sub-Saharan Africa. These countries are particularly vulnerable and exposed to the effects of climate change but are not emitting large amounts of GHG. Hence, investing in climate change mitigation projects in these countries will not have a large effect on overall climate change and, therefore, not materially help the population of Sub-Saharan Africa. This is also why adaption investments will not be effective in the long run. On the other hand, investing in climate change mitigation projects in India, which is the third-largest contributor to GHG emissions, could have a long term and meaningful effect for Sub-Saharan Africa, as this would decrease global GHG emissions on a larger scale.

The empirical data suggest that the DFIs are not planning to change their scope of geographical investment strategy since the more developed countries are able to attract private investment on their own. However, projects aiming at climate change mitigation are still extremely underfinanced, displaying that the more developed countries are not able to attract private investors to the projects needed. Hence, it should be discussed whether DFIs need to help bridge the financing gap also in more developed markets.

The stricter climate targets have led to more international discussion on the current energy consumption and given the clean energy sector increased attention. This is because most of the GHG emissions stem from fossil fuels such as coal and oil. Energy demand will continue to increase in developing countries due to population growth and higher income per capita. Increased investment in clean energy projects in these countries would help on a global scale. Furthermore, the developed countries have already started the process of shutting down fossil fuel energy plants. Technological progress has decreased the costs of renewable energy and is increasingly making it possible for the energy demand to be fulfilled with clean rather than "dirty" energy sources. However, the developing countries do not have the financial resources to do it by themselves. For this reason alone, private investment is important.

Private investors are risk-averse, and both the developing markets and the clean energy sector, being a niche of a larger energy sector, are associated with higher levels of risk (Norfund, 2016). To be able to meet energy needs in developing countries with clean energy, DFIs need to enter the sector and bridge the gap between the public and the private sector. The empirical data shows that the DFIs should have more focus on the clean energy sector, since investment in this sector efficiently combine development while at the same time improving our climate. However, the analysis shows that it is difficult to attract investment to the sector due to a high political, project and financial risk. Hence, investment strategies need to be adapted to minimize the risks associated with investing in developing countries to increase the number of bankable projects.

In addition to the general risks involved when investing in developing countries comes the risk of investing in a niche sector. High risk requires high return for it to make sense to invest.

Even though DFIs do not necessarily emphasise high financial returns, they still want a commercially sustainable projects. For instance, the CE department requires a minimum of 5 per cent IRR. However, this might not be possible to achieve in the African clean energy sector today. Indeed, such a return is hardly attainable on European projects. If the DFIs become more climate-focused, they might need to decrease the minimum expected IRR on these investments for a period.

The empirical data highlight the need for more bankable projects. The data and literature state that there is a lot of investment capital allocated to clean energy investment due to the association it has with achieving the climate targets. Private investors and governments are willing to invest in the sector, even though it is still a niche. However, there are not enough projects where capital can be put to work in developing countries. This is a problem that the DFIs face, and they are often competing against each other for the few projects that are available. The reason for this is typically a very similar and strict mandate that all follow. Even though the mandate is the cornerstone of DFIs, and its purpose is to increase the development effect of investments, it limits the DFIs investment opportunities. By only being able to invest in the poorest countries and most difficult markets, many investment opportunities that would have created a positive development effect on a larger scale do not materialise. This is especially relevant for climate investments due to their global effects. As stated, the need for bridging the gap between private and public sectors is also needed in more developed countries to be able to reach the climate targets.

7.2.1 Sub-Conclusion

The stringent climate targets are affecting the DFIs investment strategies, due to the increased attention on achieving them from their stakeholders. The DFIs will become more climate-focused in the future and will look for more investment opportunities in the clean energy sector. The empirical data and academic literature show that the level of investment in clean energy needs to be increased considerably if we are to reach the targets on time. However, DFIs investments in the clean energy sector have decreased due to high risks and shortage of bankable projects. Therefore, DFIs need to modify their investment strategies to be able to increase the investment level in the clean energy sector.

7.3. How do stringent climate targets modify DFIs energy investment strategies?

The hazards associated with climate change are widely recognized. It has become apparent for national governments that if "business as usual" continues, the effects will only worsen. Hence, global climate targets were created to give guidelines and frameworks to help minimize the consequences. There has been an increased focus on the targets in later years due to increasing awareness of the effects and scientific research, which has shown that there is little time to act. If the targets are not met on time, there will be an irreversible tipping point. Hence, the targets have become more stringent to avoid reaching the tipping point.

The stringent climate targets are shifting DFIs to more climate-focused investment strategies, due to the increased pressure from its stakeholders. The empirical data shows that the DFIs will become more climate-focused by investing more in the clean energy sector. This is because the energy sector is the largest contributor to GHG emissions, which is a major contributor to the increased global average temperature. Furthermore, this is also the sector that will experience growth due to higher living standards in the developing world, creating demand and investment opportunities.

Africa will experience a 300 per cent increase in energy consumption. Therefore, by giving African countries the opportunity to choose cleaner energy sources, large amounts of GHG emissions may be avoided. However, the level of GHG emissions today is already too high, and if it is not reduced, global average temperatures will continue to increase. Therefore, investing in renewable energy is seen as a climate change adaption investment, rather than a mitigation investment. But without mitigating the level of GHG emissions, the effect of adaption investment will be offset, as more negative effects of climate change will be experienced. Hence, DFIs need to invest in energy projects that mitigate GHG emissions that will lead to the closing down of already existing fossil-fuel power plants. An example of how this could be done is the investment in the LTWP project that helped shut down three coal power plants in Kenya. It also avoided future GHG emissions by replacing the energy source with clean energy. The CE department has the sector and market knowledge to conduct such investments. Sadly, the empirical data shows that projects such as the LTWP project are rare. The CE department has limited human capital; hence needs partnerships to be able to find and develop more such projects. Even though the department has mostly voluntary risk bearers

when they are investing in a project, it is difficult to find partners who are willing to share the risk at an early stage. Therefore, large-scale projects often are challenging to get off the ground.

Increasing investments in the clean energy sector are a crucial step in reaching climate targets due to both its mitigation and adaption effects. That is why there is a large amount of financial capital set aside by governments. Many private investors are also prepared to invest in clean energy. However, there appears to be not enough bankable projects in the developing countries to invest the available funds, so much capital is not being deployed. For instance, Norfund wants at least 50 per cent of its portfolio to be in the clean energy sector, however, in 2018, only 26 per cent of its investments were allocated to the sector. To be able to reach its target of 50 per cent in clean energy, Norfund will need to increase its investments.

Furthermore, as every DFI plans to increase its investment in clean energy, even more projects need to be available for all the capital to be deployed. One way they could increase the level of bankable projects is to increase the geographical reach. The CE department mostly invests in countries in Sub-Saharan Africa. They do so because its mandate states that it should invest in the poorest countries with low access to capital. As most DFI's follow the same strict mandate, it is limiting their ability to increase the investment level in the clean energy sector. The poorest countries are not emitting a large amount of GHG, and hence, giving these countries clean energy will not offset their exposure and vulnerability to climate change in the long run. To minimize the exposure and vulnerability of these countries, the overall level of GHG emissions needs to be mitigated. And since most of the fossil fuel power plants are in more developed countries, DFI's should also focus its clean energy investments to these countries. This will increase the availability of bankable projects and increase the climate-related development effect their investments have on the poorest countries in the world. With more capital than projects, it is important to ensure that the required return is in line with the private sector to avoid crowding out effect.

The analysis also shows that the investment level in the clean energy sector is influenced by energy policies. The international and national energy policies affecting the CE department

are mostly in favour of increased clean energy, which should help increase the availability of clean energy projects. But the political risks associated with the energy policies, especially in Africa, are offsetting the increase in level. Other risks offsetting the CE department's ability to invest are project and financial risks. Together, the risk level when investing in a niche sector as clean energy is limiting the DFI's ability to increase their investment level. Political risks are difficult to minimize, as they are long-term risks the government control. However, investing in more developing countries that have stable governments would decrease the risk to some extent, so the argument of increasing the geographical focus point is applicable here as well.

To increase investment within the sector, DFI's could potentially look to expand their set of investment tools. This could be done indirectly by providing capital to concessionary finance institutions, which again could encourage overall project support through either subsidising funding costs or take first risk capital. In a more direct form, the DFI's could be willing to take on projects at an earlier or riskier, stage by for example engaging, in project development support. Most project developers are facing long lead times on projects with a lack of funding to bring the projects to a bankable stage. To date, it appears that the DFIs including Norfund's CE department, prefer to engage only when projects require capital to fund construction. This might be too late to see enough projects materialise. Furthermore, they might need to increase the investment period in each project, as private investors might not be willing to enter the market now. Climate change mitigation is a long-term goal, and only being invested for 5 to 10 years in each project might not be enough. DFIs may also, in addition to a broader geographical reach, contemplate to increasingly invest in platforms for development instead of in specific projects. A platform, or a company, with its own management and project pipeline, could offer a faster and more efficient way of bringing projects to an investable level.

Decreasing the required level of financial return on investments could also broaden the investment scope. A consequence of both entering at an earlier stage and staying with the project for a longer period may impact overall returns, as typically value creation happens during a project's financing, construction and commissioning stages (Ilic et al., 2019). The "tops" and "tails" often provide low returns and/or higher risk. Initially, before licenses and

concessions have been received, a project cannot be funded and has no income. In the latter phases of a clean energy project, risks increase as performance may be reduced, and the typically financially stressed off-taker is less committed to pay for the project due to new, often more attractively priced projects having moved up the payment waterfall.

The CE department has a minimum of 5 per cent IRR on investment, but this might not be possible to achieve. As the DFI's follow the same mandate, they usually have the same minimum financial return requirement. Hence, DFI's may need to decrease the minimum IRR on clean energy projects. When they have helped to make the clean energy sector more accessible for the mainstream investor, the risk has been reduced and the required financial return can be adjusted.

7.3.1 Sub-Conclusion

In short, DFI's need to increase their geographical investment focus to include more developed countries that emit higher levels of GHG, increase investment time period and re-evaluate their financial return expectations to be able to follow a climate-focused energy investment strategy. This will lead to an increase in investment level in the clean energy sector that is required to reach the climate targets on time and give them the opportunity to reach higher development effect levels in the long run.

8. Conclusion

The aim of this paper has been to investigate the need for DFI's to take a stronger position in the fight against climate change. This is done through a case study of Norfund and its CE department. In this paper, particular attention has been paid to, on the one hand, more stringent climate targets and, on the other, the energy investment strategies of DFIs. The former necessitates greater levels of investment in climate mitigation and adaption, whilst the latter can be adjusted to form a bridge between the public and the private sector, leading to higher investment levels. To investigate the problem area, the paper focuses on the reasons for the stringent climate targets and how this could affect DFIs' investment strategies. Analysing Norfund and its CE department's stakeholders and investment level provides an understanding of how it impacts any DFI. Then the strength and weaknesses and the opportunities and threats are summarized in a SWOT analysis. In this way, the research found and evaluated which consequences DFIs could face due to stringent climate targets. Advice on how to modify existing investment strategies was given based on this analysis.

The research shows that climate targets have become more stringent due to increased public focus and a recognition of various threats associated with climate change. Climate change has been described as a threat multiplier with the potential to worsen some of humanity's most significant challenges. Therefore, a variety of governments have used the momentum to strengthen their climate targets to indicate that they are dedicated to fighting climate change. Empirical data and analysis indicate that DFIs will become more climate-focused due to increased attention from a wide range of stakeholders. This may lead to higher levels of clean energy investments, as the sector is regarded as key to increase climate change mitigation. However, the investment level in the clean energy sector in developing countries remains too low, and the available capital is not always fully deployed. Hence, DFIs will need to restructure their investment strategies to be able to increase their own investments in the sector. By doing so, this paper believes that the overall investment level in the sector will increase due to more private investments being allocated to developing countries.

This paper found that in order to increase the clean energy investment level and adopt a stronger focus on climate, DFIs would need to increase their geographical investment focus to include countries that are more developed, increase the investment horizon and re-

evaluate their financial return expectations. By increasing their geographical investment focus, the DFIs will be able to invest in countries that emit higher levels of GHG and hence increase its development effect in the less developed countries in the long run. Increasing its investment horizon will allow more projects to reach a bankable stage. That may again attract more private investors and a virtuous circle is established. By decreasing the financial return expectations, more projects that were previously associated with too high financial risk may be pursued.

In conclusion, the DFIs can help reach the climate targets by bridging the gap between the public and private sectors in developing countries through an increased level of investment in the clean energy sector. To do so, they will have to restructure their existing investment strategies to incorporate a dual focus on development and climate. Hence, the paper is of value to DFIs in their on-going discussions on why and how to become more climate-focused. If the strategic restructuring advice given in this paper is taken into consideration, DFIs can increase their clean energy investment level and hence help achieve the climate targets.

9. Perspective and Further Research

The following section will first discuss some of the complications whilst completing this research. Thereafter, the section identifies where further research could be beneficial and discusses how the findings are relevant outside the sector for clean energy.

During the writing process, COVID-19 spread drastically. For our research, it has caused some complications in the form of our data collection and our writing process. Firstly, our findings might have been different if we were able to conduct interviews physically, these interviews could have contributed with additional information and more colour to the thematic. To a certain extent, it might even have influenced the objective of this research. Furthermore, as countries and businesses went into lockdown, the amount of empirical data we were able to collect was impacted. Planned interviews were canceled, and the access to internal reports and financial data were limited. Without knowing what additional information could have been provided to us, it is challenging to gauge the consequences these potential open areas could have had for our research. Secondly, we were not able to sit together during the most critical time of our writing process. Therefore, it was, at times, difficult to obtain a fully coherent text.

The conclusion mainly focused on Norfund's clean energy sector, which opens up for a discussion on how the findings of this project could be used in a wider setting. However, as the results are based on one case study, generalizations for all DFIs cannot be methodically concluded. As mentioned in the methodology section, the findings of this paper can only provide a possible explanation of how and why climate change influences DFIs energy investments based on the case study of Norfund's CE department. In that way, the results of this study help create ideas for other researchers to further investigate these findings in different sectors.

Further research could provide a deeper understanding of some of the components influencing the environment in which DFIs invest. While not neglecting that the relevance of the conclusion is restricted to Norfund, it seems reasonable to investigate how the findings are applicable to other sectors in Norfund as well as for different DFIs. This could be done by examining other cases to either verify or contradict the tendencies found for Norfund. This

research has not thoroughly touched upon the aspects of how DFIs and Norfund select their investment projects. Further research could, therefore, be conducted on Norfund's and other DFIs selecting processes, as this might have implications for the success of DFIs to invest in more clean energy. Thus, a more comprehensive understanding of each DFIs selection process could be highly relevant.

Furthermore, the consequences of COVID-19 are impacting developing countries drastically. Many African countries are experiencing immense financial issues that limit the local government's ability to pay for private energy sources. Also, social unrest due to increased unemployment and social distancing can destabilize already fragile states. The perceived risks entailed with investing in these difficult markets can increase, which would affect DFI's ability to attract private investors and invest themselves. Hence, it would have been interesting to research how the financial and social repercussions could influence the modified energy investment strategies this paper recommends.

In conclusion, the investment strategies used by DFIs to minimize the impact of climate change are still somewhat uncharted territory. This project has shown possible aspects of how climate change is affecting DFIs as the focus on clean energy intensifies. However, it must be recognized that certain elements of interest remain. The findings using Norfund as an example can be an inspiration for further research to explore how the stringent climate targets affect DFIs.

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11. Title Page Image

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12. Appendices

Appendix 1: Interview Questions Guide

There are eight questions in our questions guide:

1. How are you investing today, purely with focus on development or also with an eye to a climate agenda?
2. In your view, how may your investment focus change in 5 years?
3. What are the biggest challenges and opportunities when investing sustainably in developing countries?
4. Will climate gain a more central role in your mandate in the future?
5. If so, how will it change your mandate/focus points?
6. How do you believe a Development Finance Institution can most efficiently invest in climate change?
7. Would you say adaptation or mitigation towards climate change is more important in minimizing global extreme poverty? Why?
8. Climate change is a global issue, and it is known that the developed countries are the biggest contributors to greenhouse gas emissions. With this in mind, would adopting a more climate-focused mandate affect your geographical focus areas?

Appendix 2: Interview with Karoline Teien Blystad (Norfund) - 20.01.2020

Where: Karl Johans Gate 2, Norfund Hovedkontor
Length: 47 min 27 sec
Who: Regine R, Karoline Teien Blystad K, Martin M (Intern)

Transcription:
R: Development Finance Institutions er ekstremt spennende, og jeg har forstått det sånn at det er investering til å gi til andre, hjelpe dem å få development, additionality, og slikt. Men jeg har også lest mye om hvor vitkig det er at det blir mer climate finance, men også at man ikke nødvendigvis skal hjelpe å bygge mer energi (selv om det selvfølgelig er viktig), men at man heller skal fokusere på investere i kullkraftverk i India og hjelpe dem med å stenge det ned i stede for
å bygge nye i Afrika. Planen vår så langt er å begynne oppgaven med å lage et omriss om at ”klima er viktig” og at det trengs mer penger til det.
Derfor begynne argumentasjonen på hvorfor DFIer burde være de som hjelper til. Selv om hovedmålet (til DFIer) ikke nødvendigvis går inn på klima.
M:Det er jo vanskelig, siden får å få development effekt er det billigere å investere i kullkraft verk, så man må forsvare den også litt. Men jeg har lest en artikkel om at
det blir billigere med sol og vind-kraft. Det hjelper at teknologien har blitt så mye bedre.
K: Men skal dere ha med noen om det med
at klima finans kan jo være i developed countries. Skal du ha
med argumentasjon på hvorfor det må skje i India, Sør-Afrika og fattige land. Hvorfor det er viktigst og vanskeligst å få klima investering dit?

R: Vi har lust til å ha den vinklingen, fordi vi føler at
det er de landene som ikke selv klarer å finansiere det på egen hånd. Og det er jo vanskelig for private investorer å gå inn i emerging markets, spesielt med tanke på langsiktige investeringer som klima trenger. Derfor har vi lyst til å bygge argumentasjonen på at
det er DFIer som må gjøre dette. Eller ikke da selvfølgelig.
Men ut ifra den researchen jeg har gjort så langt, så er det flere som har argumentert for at DFIer allerede har en av de største investeringer innenfor klima av offentlige midler. Men det er jo ikke i nærheten av nok, siden investeringene har ikke økt siden 2013/2014
K: Ja, ODI har gjort en del undersøkelser på det. Vi
har også sett på en graf om sustainable development goals som kan være relevant. Den viser ti l at de
(utviklingsland) ikke kan investere på egenhånd og hvor lite skatt de klarer å dra inn. Så deres "financing gap" er veldig stor. Men på vår side
av verden klarer privatsektoren å stå for mye av det. Så den grafen kan bli brukt for
å argumentere for at utviklingsland trenger støtte.
Klima i Norfund har blitt diskutert ganske mye i styre og strategi. Men vi har jo egentlig bare et utviklingsmandat. Det har jo vært et spørsmål om vi skal endre på mandatet vårt. Energiproduksjonen vi har bidratt til er jo en bieffekt. Og styret er jo veldig klar over
at hvis Norfund skal velge mellom to
land, velger man landet med størst fattigdom og ikke der man kan bytte ut fossil-energi. Men det er opp for diskusjon nå.
R: India er for eksempel et av de landene som slipper ut mest CO2, men også et av
de landene som blir mest påvirket av klimaforandringene. Veldig mange
av landene dere investerer i blir påvirket av det. Det er litt den dobbelteffekten, at
det hjelper kanskje ikke å bygge solcellepaneler, hvis hele agrikulturen deres blir oversvømt. Man kan lage en argumentasjon rundt at man først burde hjelpe klimaet,
for så å hjelpe mer på et micro-nivå.
M: Jeg så at "Bridging the Gap Between Climate Finance and DIFs" er temaet for oppgaven. Det ville vært spennende hvis det var noe data på det,
å finne ut hva hver million investert i fornybar energi gir flere jobber enn å investere i kullkraf tverk. En sånn sammenligning ville vært veldig spennende å få sett på.
Veldig spennende hvis man klarer å koble sammen fornybar energi med jobber.
R: Ja det ville vært veldig relevant. Kunne vært kult å
vise til at DFIer sitt mandat er human development og at man holder
seg på litt samme tematikk. At man kan argumentere for at
det er human development å fjerne kullkraftverk i verden.
K: Vi er jo innenfor et annet tema da. Det finnes jo flere nivåer, adaptation er jo egentlig det vi bidrar til mest siden vi reduserer fattigdom. Så kan folk kjøpe seg et bedre hus,
etc. Så kanskje vi burde fokusere mer på mitigation, som er vel neste nivå. For
vi mener allerede at vi bidrar enn del til adaptation.
R: Vi har lyst til å dra inn i oppgaven diskusjonen mellom "adaptation vs mitigation". Burde Norfund heller fokusere på adaptation eller mitigation. Adaptation er jo
like viktig i landene som blitt utsatt for klima forandringene.
K:Kommer dere til å komme inn på hvilken rolle Norfund skal ha i forhold til andre? Hva er d et best at vi gjør og hva er best at andre aktører gjør?
R: Vi må nok gjøre det. Drømmen er å kunne intervjue litt flere DFIer, som eksempel den i D anmark eller den i England. For å kunne se om de har en annen vinkling på det eller om

de allerede har begynt med det. Vi har allerede lest at den engelske tar opp temaet en del i nyhetsbrev. Så kan kunne vi ha sett på hva de har gjort siden de har begynt.
M: IFU har stoppet med investering i fossile energikilder.
R: Ja. Så og se på hva de har gjort og hva som fungerte for dem, og så sammenligne det med deres strategi etc. Den engelske er jo større enn Norfund, så de har kanskje mulighet til å gjøre mer akkurat nå. Men at man kan lage en langsiktig plan for Norfund.
K: Vil dere gi en anbefalt vei for Norfund eller DFIer?
R: Jeg vil helst fokusere på Norfund for å kunne minimere oppgaven litt. Derfor har vi tenkt å fokusere på energisektoren og Norfund.
K: Ja, da er kanskje mitigation mer viktig enn å ta inn adaptation.
Vil dere anbefale oss om hvilket land vi skal gå inn i eller heller prosjekt?
R: Det må vi se litt an. Drømmescenario ville vært å kunne anbefale akkurat hvor dere burde gå inn fordi ”effekten ville vært, bla bla bla”. Eksempel, å si at å gå inn i India i akkurat denne byen og hjelpe å fjerne akkurat denne kullkraftverket ville gitt så mye effekt. Og så kanskje vise til hvor mye det kan hjelpe å nå de 17 SDGs.
K: ”Zero” har en kampanje på displays av kullkraft. Det kan være verdt for dere å se på. Jeg prøver å komme på alle de tingene vi har vært borti.
M: Det er også en klimakonferanse på torsdag (ikke sikker på hva dette er).
R: Dere har begynt å tenke på det siden dere har begynt å legge opp en klimastrategi?
M: Ja vi har begynt med det. Så langt har vi bare gått gjennom hva de andre DFIene gjør, de som har klima policyer som ligger ute. Parisavtalen blir nevnt mye.
Noen skal ikke investere i fossil-energi, mange skal investere i clean-energi som gass og hydro. Og andre fokuserer på aggregater.
Dere kan se på hvorfor det burde bli fjernet fra porteføljen (fossil-energi?).
K: Det kommer til å bli en ganske stor debatt her om gasskraft.
M: Hvis dere klarer å vise at utviklingseffekten er større i gass kontra energi.
K: Dere kan se på jobbeffekten ved å bytte ut energi.
Eksempel ved å få strøm er det mindre avbrudd og derfor mer jobb. Det ville vært bra å ha argumentasjonen på både klima og utvikling. Det er jo litt omdiskutert.
Men gass er nok bedre enn kull. Hva burde bytte ut hva.
R:Det blir nok et langsiktig perspektiv på oppgaven, så kanskje det kommer noen nye reguleringer eller slikt som kommer til å påvirke jobbmuligheten i kull-industrien.
Da ville det vært smart å begynne prosessen med å bytte ut energikilde nå.
K: Absolutt! Det trenger ikke å bli helt ulovlig engang. Men bare å true med at det kanskje blir det, så trekker jo alle investorer seg ut. Så blir det til ”stranded business”. Det er det de er redd for med alle kullkraftverkene.
M: Det er billigere å bytte ut kullkraftverk med fornybar energi. Det lønner seg over 20 år. Det koster mye mer å drive et kullkraftverk.
K: Det er høyere drifts kostnader med kullkraftverk. Men de har jo helt forskjellig funksjon. Den ene er et variable og den andre er helt stabil. Batteriteknologien utvikler seg veldig nå. Hvis man har flere batterier og bedre, kan man begynne å konkurrere med kullkraftverk som kan produsere strøm hele døgnet. Tittelen deres er ”Bridging the gap between climate finance and DFIs”.
M: Er det for å diskutere hvorfor DFIs skal få mer penger til å investere i klima?

R: Det er også noe som må ses på. Jeg har lagt merke til at
man må gå veldig politisk inn i det hvis man skal argumentere for
at staten skal gi mer penger. Vi vil jo diskutere det, og hvis vi finner en måte å vinkle det
inn i oppgaven vil vi nok gjøre det, men
med tanke på få sidetallene vi kan ha blir det nok litt vanskelig.
K: Dere kunne gå gått inn i det, ikke som at de burde ha mer penger, men heller at
vi får til mer for en veldig mye lavere pengesum. Skal dere ha med noe om
å få tilgang til klima investerings pengene? EU har
jo satt av penger som skal gå til klimafinansiering, men de
vet ikke helt hvordan de skal bli brukt. Så skal dere snakke noe om hvordan vi burde bli finan
siert?
R: Vi burde nok snakke noe om det, for å vise at vi har kjennskap til det.
K: Ja, som "hva er den beste måten å investere disse pengene på?"
R: Jeg skjønner at klima trenger mer penger og da må mer penger komme inn.
K: Vi har pleid å snakke om at det er ganske mye klima penger, siden statene pleier å sette det
av, men
de kommer ikke alltid til godt nytte. Det er ikke mange som har gode prosjekter å gå inn i, ell
er som tør å ta risikoen. Det hjelper ikke bare å ha penger, men
man må ha prosjekter og investorer som vil gjøre jobben. Til prosjektutvikling og sånt.
Det er en flaskehals det der. Når det først kommer gode prosjekter strømmer investorene til.
M: Lake Turkana prosjektet var litt sånn.
R: Så det kunne hjulpet å komme frem til et prosjekt dere kunne investert i?
M: Lake Turkana var et prosjekt hvor man fjernet tre kullkraftverk.
Det er et veldig relevant eksempel.
K: Der klarte man å få nok klimabetingelser inn. Etter
at noen statlige aktører hadde gått inn og tatt
det meste av risikoen, kom det flere private aktører inn. Det var vellykket, for
da blir det ikke tatt fra de offentliges Budget og da blir det sett på som en
god investering. Sånn kan man øke volumet. Det er jo ikke nok av
bare statelige midler, siden budgetet er en hvis prosentandel.
R: DFIer har jo som hovedmål å være "first-
movers", komme inn og få andre til å investere senere. Enda et argument for
å gi dere mer penger, for da kommer jo andre til å komme inn senere.
Private sektoren må jo også gå inn for at dette skal gå rundt.
Det er forståelig hvorfor private ikke gjør det. Og da må DFIer få dem til å kunne komme inn
i markedene.
M: Ja, det ville vært genialt hvis dere kunne vist hvorfor vi burde få mer penger. At
vi burde få en del
av klimapotten ikke bare bistandspenger. Hva er det dere vil ende opp med? Er det
en konklusjon eller heller en sammenligning, eller heller "dette bør skje"?
R: Vi vil jo ende opp med å gi noen konkrete strategier, eller for
å få penger eller på prosjekter. At vi er konsulter for dere som skal hjelpe med
å gjøre litt ekstra research. Jeg vil absolutt komme frem til noe konkret.
K: En kollega av meg prøver å skrive en kronikk om hvorfor, eller du
vet elektrifiseringen av oljeplattformer som gir Equinor mye penger og det går jo på bekostnin
g av noe annet. OG han prøver å skrive hvorfor det
å finansiere Norfund bidrar til mye lavere klimautslitt enn det
å bidra til noe på hjemmebane. Som eksempel, Norge sitter

med disse pengene her, hva er den beste måten å investere pengene? Er det til Equinor for ele ktrifisering eller er det til Norfund som hjelper utviklingsland med
å få en ordentlig forandring? Det ville vært kjempe nyttig for oss hvert fall. Problemet er at det er vanskelig å skrive siden det mangler så mye tall på det.
M: Spennende å kunne sammenligne utslipp fra olje og kull og annen energi. Equinor har jo nå koblet til Trollfeltet til land med ledninger for
å kunne bygge vindmøller (elektrifisering av sokkelen).
K: Ja, akkurat. Og det har jo blitt finansiert masse.
M:Ville vært interessant og så på hvis du minimerer så mye utslipp fra oljefeltene, kontra hvis du inverester pengene i fornybar energi i Afrika og fjerner kullkraftverk. Jeg kan tenke meg at det er ganske mye større effekt på det enn oljeindustrien.
K: Rett og slett finne ut hvor du får mest effekt.
M: Ja, for det er ikke ekslusivt Norge som har klimautslipp akkurat.
K: For da kunne du funnet ut hva Norfund burde gjøre og sånt. Vi bruker en
database som heter ”Avoided CO2 Emissions”, og ser på hva er ”emission factor” i de forskje llige landene. For
da hvis det er mye fornybar energi der fra før av blir ”emission factor” lavere.
Det kunne vært en relevant måte å sett på det.
Ellers kan dere se på Lake Turkana prosjektet og se hva effekten har vært der.
VI kan gjerne sende dere et case studie for prosjektet.
Den ble laget før prosjektet var ferdig, så vi har sett nå at effekten er enda større enn det de estimerte.
M: Jeg synes det er en ganske smart vinkling og sammenligne på den måten.
Det er kanon hvis dere kan argumentere for hvorfor vi burde få mer penger.
R: Er dere litt begrenset på grunn av deres mandat?
Kunne dere gått inn i et prosjekt som bare skulle hjelpe global klima?
K: VI kunne ikke gått inn i et klima prosjekt som ikke var i et utviklingsland.
Det må i hvert fall være et ODA godkjent land. Utvikling står så tydelig i vårt mandat. India har for eksempel mye fattigdom og mye kullkraftverk, så det kunne vært en mulighet.
De landene vi investerer i nå, har vi ikke gått inn fordi de trenger mest klimahjelp. OG det kunne vi har gjort. Vi velger som regel land hvor vi kan spille en rolle, hvor vi har mest muligheter. VI
har satt en ramme på oss selv siden vi ikke kan være eksperter på alle land.
R: Hva er forskjellen på ”extended reach” og ”investment location” (ref. Kart over landene de investerer i)
K: Vi skal investere i de landene som er mørkeblå, og de brune men de er vanskelige land.
De grønne hvis vi er sammen med en partner eller et fond.
R: India er dere i fordi partneren deres er der-
K: Ja, det er litt ressursbruken. VI kan ikke være eksperter overalt. Vi har lov å være der.
Det er en OECD liste over hvor vi kan investere.
R: Så det ville vært litt ”far fetched”
å komme frem til et helt nytt land hvor dere ikke allerede investerer?
K: Ja, det er en litt selvpålagt restriksjon.
R: Det hjelper jo meg at ikke hele verden er åpen.
K: VI legger jo strategien selv i styret her, det er ikke utenriksdepartementet som gjør det.
M: FinnFund investerer masse i skog og putter det på klimakvoten sin. De har
en egen ”carbon secrestration” som de kalkulerer og der er de kjempe positivt.
K: Vi ser på hele portoføljen.

M: Det er jo mange måter å regne det ut på.
R: Driver dere mye med samarbeid med andre DFIer og andre?
K: Vi driver med mange andre prosjekter med andre.
M: Problemet da er vi ikke blir så katalytisk av det.
K: Men det som er bra er hvis vi går inn i et prosjekt med
en privat investor som ikke ville gjort prosjektet uten oss i ryggen. Det er viktig å få inn privat kapital på banen. VI burde bare være en liten del av et prosjekt.
M: Goldman Sachs og BlackStones skal investere 750 milliarder og 1 trillion
dollar i climate finance. De skal bare få folk til å investere der. De blir til et slags DFI.
K: Blir spennende å se hvor de går inn i og hvem de får med
seg. Hva er egentlig deres klima strategi?
M: De skal bruke 750 milliarder og 1 trillion, og det er mye penger. OG de skal bare
ha avkastning.
R: Dere må vel også ha en viss avkastning på prosjektene deres?
K: Vi har et 5% IRR i lokal valuta. Det er vel et minimum,
men egentlig må bare selskapene overleve. Primærmålet vårt er ikke å tjene penger, men at selskapet overlever sånn at utviklingen ikke forsvinner.
R: Det er også viktig å ta med inn i oppgaven. Det må være en avkastning til slutt.
K: Det kan være at dere kommer borti "blended finance", hvor man
blander vanlig gave bistand sammen med kommersielle midler som kan ta bort risiko i et pros jekt. Det kan forvirre tallene litt. Hvorfor noen plutselig har veldig billig energi.
Det kan fort gjøre det litt uattraktivt for private aktører. Noen har subsidier og andre ikke. Det har vært en stor diskusjon om "blended finance". Det er noe vi liker å unngå, hvert fall til nå.
Men vi har et lite prosjektutviklings fasilitet her hos Norfund. Som er vi
tar fra vårt eget Budget. Vi gir det egentlig til prosjektet,
men hvis prosjektet blir noe av blir det gjort om til eierandel. Men egentlig holder
vi oss unna det.
M: Jeg har lest at USA er det landet som har redusert klimautslippene sine mest.
K: det er vanskelig for Etiopia å gjøre.
R: Jeg har lest en spennende artikkel om
India. Hvis India ikke får fikset klimautslippene sine kommer vi ikke til å kunne takle klimapr oblemene. Selv om
de sikkert har redusert klimautslippene sine mye allerede, må mer bli gjort. Hvert fall på grun n av at de skal bli fisket innenfor 10 år.
M: Når jeg jobbet i Equinor mente de jo under sine propaganda møter at
det bygges flere kullkraftverk som bygges/finnes enn oljeplattformer.
K: Det er spennende å se innpå om det faktisk stemmer.
R: Ja, selv om jeg ofte blir dratt mot India har vi jo lyst til å holde et åpent fokus.
M: Indonesia har også fullt av kull.
K: Hvor må verden rette klima finansiering sin?
R: USA og Kina har kanskje nok midler til å takle sine egne klimautslipp.
K:Vi må øke klima investeringen, bruke det riktige virkemiddelet (Norfund er et virkemiddel) og til det rette landene. Dere kunne hatt et slags filtreringssystem.
R: Vi har sett mye på lister
over hvem som slipper ut mest CO2 og hvem som blir påvirket mest.
Ville vært spennende å sammenligne de listene. India
for eksempel slipper ut mye og blir veldig påvirket av konsekvensene.
Det ville jo vært et godt sted å begynne. Kenya sliter også masse med konsekvensene. Men de

slipper ikke like mye ut som andre land.
Da kunne man kanskje økt effekten av mer klima finans inn i landet.
K: Det er et komplisert prosjekt. Norge er jo litt dobbelstandard med oljen vår.
M: Også smart å argumentere at man får mindre usikkerhet i klima og da er det enklere å drive prosjekter. Det er veldig skadelig for utvikling med ustabilitet i klimaet.
R: Jeg vil svare på spørsmålet hvorfor DFIer burde gjøre det, for seg selv og for andre.
Med tanke på forbedring av klima og forbedring av utvikling til det spesifikke landet.
Det kan hjelpe deres investeringer over lang tid og verden over lang tid.
K: Ja, akkurat. Dere tenker å fokusere på energi sektoren ikke sant? Ikke hele porteføljen?
R: Ja, helst bare energi.
K:VI kunne jo investert i andre sektorer også. Så hvis dere ikke ser på andre sektorer, så treng er dere argumentasjoner for det.
R: Ja, det er vi klar over. Vi kommer nok til å argumentere for at CO2 utslipp er et av de største problemene for klima og da bare skrive at vi
bare vil fokusere på det. Hvis vi skal prøve å ha med mange sektorer, kan det
fort bli for stort eller for overfladisk.
K: Det gir mening. Men det er vanskelig å argumentere for
at alle investeringer til Norfund skal gå til energi.
R: Ja,
det går jo ikke. Så da må man argumentere for enten mer penger eller at pengene som går til e nergi sektoren skal gå til klima prosjekter.
K: Ja. Se på hvor Norge putter pengene sine og se hvor man kan få mest "bang for the buck".
Sluttet møtet med å snakke om evt kilder vi kunne trenge.

Appendix 3: Interview with Karoline Teien Blystad (Norfund) - 09.03.2020

Where: Karl Johans Gate 2, Norfund Hovedkontor
Length: 35 min 27 sec
Who: Regine R, Karoline Teien Blystad K

Transcription:
R: Så først kan vi gå gjennom de åtte spørsmålene, siden vi vil gjerne kunne sammenligne de forskjellige DFIene og da stiller vi de samme spørsmålene. Så vi kan få samme informasjon.
K: Jeg kan også supplere på epost hvis jeg kommer på noe ekstra å si.
R: Det er bra. Så tenkte jeg at etterpå kan vi snakke mer generelt om Norfund; hvordan blir dere finansiers, hvordan kommer pengene fra og hvordan velger dere prosjekter dere vil investere i og kanskje litt om rammeverket for investeringene deres. Så det ville vært fint å kunne snakke mer om det etterpå.
R: Første spørsmål er: hvordan planlegger dere å investere om 5 år? Er det en forskjell dere kan se for dere allerede nå om hva som blir gjort om 5 år?
K: Vi har lagt en strategi for enden av 2022, så det er ikke en langtids plan som blir planlagt nå. Men i den planen der som er noen år frem, skal vi jo investere mer og investere rundt halvparten av portoføljen i clean energy, så da må jo den øke siden alle investeringene øker. Vi skal satse på et nytt område som heter green infrastructure, som jo kan ha noen klima aspekter ved seg. Vi kommer til øke gjennom etablerte plattformer og partnerskap, og søke om å etablere noen nye. Det er for å få litt skala på det og for å mobilisere private investorer. Det er hovedtrekkene i den strategien. Det blir nok ikke så mye endringer egentlig.

R: Det må ikke være noen endring. Vi vil bare vite hvordan dere tenker at dere kommer til å investere om 5 år.
K: Det går veldig bra med Norfund, derfor er det ikke store planer om å forandre mye. Den strategien som blir lagt nå, der er det ikke noen radikale endringer. I motsetning til andre DFIer, har vi et veldig klart sektor fokus og geografi fokus. Det gjør at vi blir tvunget inn i de sektorene vi mener har stor utviklingseffekt og land hvor det er et stort behov. Det setter vi på strategi nivå, mens noen DFIer har det veldig åpent og at alle mulige sektorer kan investere i. Men da må de ha veldig god "justification" på hver enkelt investering. Men det er en del DFIer, jeg vet ikke helt om de har kopiert oss, men de har hvertfall begynt å ha mer sektor og geografi tilnærming. Vi investerer fortsatt mye egenkapital og det skal vi fortsette med. Vi har hatt opp til 85% i egenkaptial i det vi har invester i og vi mener det er sånn vi får mest innflytelse. Da kan vi sitte i styrer og være aktivt med. Men det er også veldig ressurs krevende, så vi skal fortsatt ha ca 80% eller rundt det i egenkapital, men økte noe på lån og fond. Banker trenger jo først og fremst lån og ikke egenkapital. Så det er jo forskjeller på sektorer og hvor arbeidsintensivt det er.
R: Andre spørsmål: Hva er de største utfordringene og mulighetene når man investerer i u-land? Du kan gjerne si en ting på hver.
K: På utfordringer kommer jeg på hovedsakelig på to ting. Det ene er å finne prosjekter som er klare å bli investert i. Det er ikke sånn at det flommer over med veldig gode muligheter som bare venter på penger. Så derfor har Norfund en prosjektutviklings pot som vi har brukt på en del clean energy prosjekter for å få frem de gode prosjektene fra sånn veldig tidlig fase til noe som andre kunne tenke seg å investere i. Og også vi da. Så det er mangel på prosjekter å investere i, i mange av de vanskelige markedene. Man finner ikke store bedrifter man ønsker å investere i. Så enten må man utvide og ikke bare se på de markedene som er vanskelig å investere i eller så må du være med å utvikle de. Så vi har startet opp noen fond. Vi gjør det man kaller "greenfield". Vi har en kopi på det og en god andel i det. Det er der vi virkelig tilfører mye. Men det er jo også veldig mye jobb og høy risiko. Det andre jeg tenkte på når det gjelder utfordringer er veldig mange lag med risiko som er på hver investering. Det kan være helt på mikronivå, hvor vi har investert i et landbruksprosjekt og det viser seg at den bananen for en sykdom eller den avokadoen tåler ikke sånn og sånn. Til at hele management teamet virker ikke, eller valuta kursene går adundas, eller helt sånn Trump og Kina har krig der og det hindrer global handel. Så det alt fra mikro til veldig makro bilde, så det blir veldig mange lag med risiko som vi ser slår ut på veldig mange av investeringene våre. Det er jo konkurser og høy risiko, men jeg tror folk ville blitt ganske overrasket når de ser eller jeg mener at folk generelt sin oppfatning av risikoen er nok enda mer skeptisk enn vi som jobber med det. Folk tenker at det er enda mer risiko enn det faktisk er. Vi får jo faktisk til ganske mange gode investeringer med god avkastning. Så til og med Sør Suden og andre vanskelige steder.
R: Så det er det som er muligheten. Man har muligheten til å gjøre det bra i disse markedene.
K: Ja, og bra for utviklingen hvert fall. At det ikke går konkurs og litt pluss. Så muligheter. Det er jo, vi har en interessant artikkel på det, at det er lave renter i vår del av verden og det store forsikringsselskaper og pensjonsfond sliter med å få den avkastningen de skal ha. Fordi veldig mye av pengene er investert i den vestlige delen av verden med ganske lav vekst og ned mot null prosent rente. Så der er det mye mer som taler for utviklingsland. Det er høyere vekst i utviklingsland. Du har mange av de klassiske sånn produksjonsfaktorene og befolkningsvekst, alle disse som inngår i en formell for vekst. Det ligger til rette i de landene. Så det er jo ulogisk at de pensjonsfondene og sånt skal investere de langsiktige pengene i vestlige landene med garantert lav avkastning i stedet for å søke ut. Det er på en måte en

utfordring vi sliter med å få de med på, men det er en mulighet. Og så er muligheten at pengene gjør en stor forskjell og kan skape mange tusen jobber. Det betyr veldig mye. Så det er muligheten.
R: Neste spørsmål: Kommer klima til å få en mer sentral rolle i deres mandat i fremtiden?
K: Det kan se ut som det kan skje. Og uansett om det kommer inn i mandatet eller ikke, så kommer det til å få en større plass i Norfund. Det er jeg ganske sikker på. Vi jobber med en klimastrategi som vi har snakket litt om før. Det er ikke noe presentere her enda. Men kanskje du rekker å få noe før dere er ferdig. Hvor både klima risiko kommer til å komme tydeligere inn som vurdering av hver enkelt investering. Vi har delt det inn i tre. Resiliance. Vi mener at vi skaper resilience at folk får mer inntekt og har en jobb og kan stå i mot klimaendringer. At de ikke er så sårbare mot klimaendringer, som å bare eie en bitteliten maisåker. Også har vi det som er investering i fornybar energi, mitigation på en måte. Også er det klimarisiko. Vi skal gjøre mer investeringer i fornybar energi. Jeg tror det kommer til å få større plass ja. Viktig, også fordi vi har en del stakeholdere som er opptatt av noe, så må vi også være det for å være relevante.
R: Neste: hvordan tror du at DFIer kan mest effektivt investere i klima. Ville det vært på de tre måtene du forklarte det nå?
K: Det kommer litt an på hva man mener med å investere i klima.
R: Jeg mener hvordan investere mot climate change da.
K: Jeg tenker først og fremst på mer investeringer i fornybar energi. De landene kommer til å vokse og kommer til å trenge mer energi. De har et ekstremt lavt energiforbruk per capita, så det er litt en "no-brainer". Og da gjelder det jo at mest kommer fra fornybar energi eller hvert fall så lavt utslipp som mulig. Gass, for eksempel, har jo vi som en del av ren energi satsing, siden det har mye lavere utslipp enn for eksempel kull og en veldig stabil kilde til energi som ikke vind og sol er. Også har vi mye vannkraft og det er en veldig bra energikilde. Jeg tror også angående det jeg sa tidligere, at å få prosjekter investerbare, eller det vi kaller "bankable" prosjekter, være med i den tidlig faseutviklinger er viktig. Vi har også ganske god kompetanse i det også som sitter her internt. Så det er en viktig rolle vi kan spille som ikke andre kommersielle egentlig kan ta seg råd til. Vi mener jo på sikt at vi skal tjene penger på det, det er ikke penger vi kaster ut av vinduet, men det er høy risiko. Man det er høy risiko å skulle være med helt fra starten i sol og vannkraft. Men der tror jeg det er et potensial, det er jo ganske mye klimapenger som flyter rundt. Masse fond som bare investerer i hverandre eller eksisterende kraftverk og sånt. Men det er jo å bygge nytt som egentlig hjelper. Det er ikke bare at kraftverkene skifter hender. Så jeg har tror på at vi kan gjøre den delen og at DFIene kan være med til kraftverket er ferdig bygd og så er egentlig risikoen i de fleste tilfellene ganske lav. Da kan kommersielle aktører komme inn å være eiere, så kan vi bruke de pengene på noe nytt og annet til vi har tatt ned risikoen. Så det er kanskje det jeg har mest tro på.
R: Ja! Det her er kanskje noe vi har snakket om litt allerede, men synes du adaptation eller mitigation er viktigst for å minimere fattigdom?
K: Er ikke det nesten litt et spørsmål om man er optimist eller pessimist? Fordi vi kjører mest på mitigation gjennom å investere i fornybar energi. Hva som er viktigst for fattigdomsreduksjon. Det er et litt vanskelig spørsmål. Jeg vet ikke om jeg har noen god vinkling på det. Det er jo det å få en jobb som er viktig, men hvis den jobben forsvinner bare hvis det kommer en tørke eller lignende så er du fattig igjen. Jeg vil jo si at våre investeringer følger klima ganske mye allerede. Vi blir ikke helt kvitt det. Vi må ha noe tilpassning til det. Det er en ting å kjempe seg ut av fattigdom, men ekstremt lett å falle inn i det igjen. Det er ett dårlig år som skal til.

R: Så kanskje en kombinasjon av adaptation og mitigation?
K: Ja, men trenger nok begge deler for å klare det. Klimaendringene er jo her allerede.
R: Siste spørsmål. Klima er jo nå et globalt problem og det er kjent at utviklede land slipper ut mest Greenhouse gasser. Så med det er i hode, ville en mer klimafokusert strategi føre til at dere forandrer på deres geografiske fokusområder?
K: Det snakket vi litt om sist. Det kan det egentlig fort gjøre. Fordi da ville vi kanskje valgt de økonomiene som har mye kullkraft eller har tenkt å bygge mye kullkraft. Sånn at vi gir de mer fokus og brukt et annet filter på valg av land. Nå har vi valgt land ut ifra utviklingsperspektiv. Hvor det er høyest fattigdom. Men hvor det er mest behov for kapital henger jo mye sammen. Du har jo Kina som bygger flest kullkraftverk, men de trenger ikke vår kapital. Det er jo litt vanskelig, for du kan ikke blande deg oppi alle sin politikk. Men hvis det ville vært en del av mandatet hos oss, så ville det endret eller hvert fall justert fokuset vårt.
R: Ja, så kanskje ikke helt til utviklede land, men mer til mer utviklede land?
K: Ja. For eksempel har vi Sør-Afrika med i våre kjerne land, men på mange parametere er det et ganske utviklet land. Men de har mye ulikheter og de har mye kull, så kanskje hvis det var enda mer klima fokus ville vi kanskje valgt å fokusere mer på de landene
med clean energy. Men det er ikke det nå. Vi skal jo være der hvor andre investorer ikke går, vanlige kommersielle, og Sør-Afrika klarer jo å tiltrekke seg kommersielle investorer. Det ville vært en balanse mellom de to. Også hvis det er mest fornybar energi, burde vi investere der behovet er stort uavhengig av klima. For da har jo vår strategi mest fornybar så det ville jo blitt det. Men bra spørsmål!
R: Takk! Det var de åtte spørsmålene jeg gjerne ville stille deg.
K: Det blir spennende å se om de andre DFIene har andre svar på dette.
R: Ja, det er vi også veldig spente på å se. Vi skal snakke med Swedfund etterpå faktisk.
K: Kan jo være at det finnes noen studier på det også.
R: Det finnes mye studier på klima og fattigdom og at de henger hånd i hånd. Så vi kommer til å bruke mye rapporter i oppgaven vår. Så vil jeg gjerne få vite mer om noe grunnleggende informasjon om Norfund. Hvordan blir dere finansiert og hvordan blir Budgetet fordelt?
K: Vi er jo et særlovsselskap, men vi er eid av Utenriksdepartementet. De setter sammen et eget styre, så vi har en dialog med Utenriksdepartementet. Men i utgangspunktet styrer de gjennom styret og en generalforsamling i året. Så der kan de endre på mandatet og sånt. Vi er ganske sånn selvstendig fra politiske vinder som blåser, hvem som er utenriksminister har ikke noe direkte noe å si for oss. Så det føler jeg vi er veldig heldige som har muligheten til å lage langsiktige strategier. Nå er ikke vår strategi så langsiktig denne gangen, men vi har kunnet jobbe ganske uforstyrret med strategien vår i mange år. Også får vi penger hvert år på Bistandsbudgettet eller Stats Budgetet. Det er ikke gitt at vi får det hvert år, men det har blitt lagt inn Stortingsmeldinger om at vi skal få en økning år for år. Nå gikk det faktisk litt ned i 2019 enn det som egentlig var lovt. Så der jobber vi for å få det opp igjen. Også i tillegg til den kapital vi får tilført, har vi renteinntekter og når vi selger oss ut av bedrifter for vi en gevinst som vi har samlet opp gjennom mange år. Så nå er fondet rundt 25 milliarder kroner. Og av det er nok litt under halvparter tilført av Statsbudgettet og resten har vi tjent selv. Det er noen DFIer som opplever at eier tar tilbake penger, men det er ikke en mulighet hos oss. Hvert fall ikke skjedd enda, men kan vel i teorien skje. Noe mer om styringsmodellen. Vi har snakket litt om strategien. Så har vi jo region kontorer i Asia, Ghana, Nairobi og nå flytter vi til Cape Town (Sør Afrika), og så Costa Rica. Og der øker vi også antall ansatte. De er veldig viktige for deal sourcing og oppfølging av prosjekter. Det er veldig mange lokale som blir ansatt som er kjempe flinke. Det er viktig for å forstå konteksten bedre, i stedet for at det

kommer noen fra Oslo og skal prøve å lære seg det. Så det har vært et veldig lurt grep. Er det noen mer om organisasjonen jeg burde ha med?
R: Jeg vet jo at dere er fordelt i fire sektorer. For alle like mye av budgettet eller fordeler dere det på en annen måte. Jeg har hørt at clean energy skal få mest?
K: Ja, det er fordi det er et ønske om at halvparten av porteføljen skal være clean energy, pluss at vi mener det er en sektor indirekte skaper mange jobber og er veldig viktig. Så de har prioritert på budgettet. Jeg vet ikke helt i detalj hvordan budget prosessen foregår, men folk har en pipeline som de genererer, som de vekter på hvor sannsynlig er det at denne blir "closed" og så kommer de med ønsker over så mye tror de at de trenger neste år. Og hvis det blir for mye til det vi egentlig har penger til, så blir det litt konkurranse i løpet av året for å få ting gjennom. Og det er jo bra for da blir de beste prosjektene som kommer gjennom. Vi har en egen investeringskomite som består av lederne for hver avdeling pluss legal og en på ESG og to eksterne IK medlemmer, investeringskomite medlemmer. Så de bestemmer hva vi skal investere i. Og så er det CEO som har siste ord.
R: Så det er ikke satt at 50% skal gå til clean energy hvert år?
K: Det er ikke helt gitt nei. Hvis de har en litt tynn pipeline, er det ikke vits å alligere så mye. Men det er et poeng at vi har de KPIene på både instrumenter, på egenkapital vs lån vs fond og hvor mye Greenfield, hvor mye LDC. Jeg kan sende deg oversikten over dette. På porteføljen prøver vi å holde at den går over tid. Så da lager vi et verktøy, et dashboard, på å følge med på kvartalsvis og i pipeline hvis det blir gjennomført kommer vi da til å holde oss innenfor de KPIene eller er vi da på vei en vei vi ikke burde være. De KPIene er jo satt for å styre oss inn på det som er litt vanskelig. Det er den porteføljе styringen vi har, og de kommer fra strategien. Og med tanke på de fire sektorene, så er ikke green infrastructure så stor enda eller der rekrutterer vi nå. Der er det ikke gjort noen investeringer enda. Og så har vi HR, finans og strategi og kommunikasjon avdelingen. Men det er ganske lean stab, prøver å ikke bli altfor tjukke liksom.
R: Så denne Green Infrastructure skal bli en ny avdeling.
K: Nå har jeg jobbet lenge med den strategien og det er jo krevende. Det er waste management, water, sanitation også waste-to-energy. Får se hva vi kan få til der. Er ikke sikkert at det blir en stor avdeling, men vi skal hvert fall prøve. Det blir mer utviklingsperspektiv. Ikke sikkert man kan finne veldig mange kjempe gode prosjekter. Ikke veldig god avkastning liksom. Det er noen av fondene vi har investert i som har investert i waste management selskaper. Og så skjer det mye på teknologisiden der også, så det er spennende.
R: Har dere noe rammeverk på deres investeringer?
K: Og vi skal for eksempel ikke ha mer enn 35% eierandel i utgangspunktet. Og vi har et ønske om at man holder seg innenfor der. For eksempel på Green Infrastructure har vi gått gjennom mange prospects som vi har hørt om via-via liksom. Så det er ikke så mange som vet hvem vi er. Det er ikke så mange som kommer direkte til oss. Det er noen norske firmaer som gjør det, men vi har ikke et mandat for å hjelpe norske virksomheter med å komme ut. Hvis de er en god partner som StatKraft eller Statec Solar, så er det helt greit. Men vi skal ikke substituere norsk eksport. Det er ikke mandatet vårt i det hele tatt. Men det er noen som tror det. Mange har noe de vil eksportere og vi kan jo markedene veldig godt og det er jo greit. Men vi investerer ikke i de. Pengene våre skal ikke gå til et norsk selskap men til en av ODA landene.
R: Det varierer litt hvordan et prosjekt oppstår?
K: Ja, absolutt. Noen ganger setter man opp et fond eller her skal vi bygge et vannkraftverk, men da er det sammen med noen som er ekspert på den sektoren. Også har vi en trakt på

hvordan vi velger ut prosjektene og sånt. At ikke hvem som helst skal kunne gjøre det. Hvis det ikke er spesielt mye utviklingseffekter skal vi ikke gjøre det. Også ser man jo ting på ESG og due diligence. Det er mange prosjekter som blir sila bort på veien. Vi har snakket om å lage en indikator på hit rate, men den har ikke blitt laget enda. Det er mange som blir forkastet. Det hjelper hvis man har en ganske klar strategi, så unngår man i en stor grad at ting blir forkastet.

Appendix 4: Interview with Gunilla Nilsson (Swedfund) - 09.03.2020

Where: Telephone
Length: 25 min
Who: Regine R, Gunilla Nilsson G

Transcription:
R: Hei Gunilla, dette er Regine Øyehaug som ringer!
G: Hei!
R: Tusen takk for at du ville ha denne samtalen med meg.
G: Skal jeg begynne med å snakke litt Swedfund og skal jeg snakke på engelsk eller svensk?
R: Hva enn som passer deg best.
G: Du kjenner til Norfund forstår jeg?
R: Ja, det gjør jeg.
G: Swedfund er samme gruppe som Norfund, men vi er ganske mye mindre enn de. Men vi investerer på samme premisser, sånn at
vi investerer på kommersiell basis. Swedfund har ingen ”special financing” eller ”grants”. Vi investerer på basis av at
det skal være kommersielt gode investeringer. Og det styrer hvordan energi og klima investeringer vi kan gjøre. Jeg så at
du hadde skrevet om adaptation prosjekt for eksempel og hvorfor man ikke gjør adaptation prosjekter. Og hvorfor vi ikke gjør det er vanskelig å finne slike prosjekter som har
en viss skala og er kommersielt gode.
Det er oftest de som investeringene som passer bedre til de med mykere kapital.
R: Ja.
G: Men innom dom tenker jeg, energi og klima er en
av våre tre hovedsektorer. Og hva vi gjør der er, ca 80%
av våre investeringer er finansiering av fornybar produksjon og distribusjon. Så vi investerer eller belåner solparker og vindparker, vannkraftverk i utviklingslandene. Det er den
store bulken av våre investeringer. De fleste er ”utility scale connected” og vi har også en del ”off-grid” prosjekt som vi finansierer. Nå holder vi på å
se på å investere i vann, ressurseffektivisering. Vi ser på om vi skal investere i skog. Men det er relativt lite, ca 20% av våre investeringer.
R: Hvordan investerer dere i dag, bare med fokus på utvikling eller også på klima?
G: Vi har nå i vår nye strategi, så er klima et tema som går gjennom alle våre sektorer.
For i alle våre sektorer, uansett om vi investerer i et sykehus i Afrika, så skal man ha en ”Climate lense”, å se på hvordan klima fottrykket på denne investeringen, kan vi gjøre noe for å forbedre det. Så dette er noe vi
ser på i alle våre investeringer. Når det gjelder development og impact, så har vi

en impact del hvor både development og klima er inkorporert. Så svaret er egentlig at vi ser på begge. Den ene er ikke viktigere enn den andre.
R: Ok, spennende. Men kommer deres investerings strategi å endre seg om 5 år?
G: Swedfund var veldig tidlig på å bare investere i fornybar energi. Så innenfor energisektoren, sånn 2015 eller 2014, har alle våre investeringer vært i fornybar energi. Vi har ingen kull eller gass. Så det er en forandring som har skjedd de siste frem årene, at vi har blitt mer grønne på den måten. Hva som kommer til å endre seg fremover er at vi kommer til å se på klima på et bredere perspektiv også. Jeg kan nevne et eksempel at vi har sett på om vi skal investere i en sement fabrikk der brenselet på fabrikken er kull og uansett er det et veldig stort klima fottrykk på en slik fabrikk.
For tre år siden hadde man ikke tenkt så mye på det, men nå ser vi på en slik investering mer helhetlig. Og det er noe som kommer til å forandre seg. Og så kan jeg tro at en annen sak som ikke skjer akkurat nå, men jeg kan tro klima prosjekter som ikke er ”commercially viable” nå, som et adaptation prosjekt, kommer til å bli det om fem år. Så det er også en annen forandring.
Vi kommer til å investere i teknologi/teknikker som den dag i dag enda ikke er bevist, men som om fem år kommer til å være bevist og derfor prosjekter vi kan gjøre.
R: Forstår. Hva ser du på som de største utfordringene og mulighetene når man investerer bærekraftig i utviklingsland?
G: Jeg tror ikke det finnes spesielle utfordringer når det gjelder bærekraftig investering, men heller investeringer generelt. For oss er det nye markeder, det er land hvor ting tar lengere tid, det finnes ikke et ”regulatory framework” som er bevist å være bra.
Det er mer investeringer som så og ikke bare bærekraftige investeringer. Alt tar lengere tid. Det er rett og slett investerings utfordringer som er annerledes i disse landene. Men jeg tror samtidig at det er en utfordring, men også en mulighet.
R: Ja, så det er det du ser på som de største utfordringer og største mulighet.
G: Ja, akkurat. Utfordringer er at det er nye markeder og med alt det som følger med det. Man kan tenke seg når man gjør en klimainvestering i et Afrikansk land, så vil vi kunne selge vår andel til noen og hvis det ikke finnes en exit mulighet, så sitter man fast i investeringen. De utfordringene som finnes i disse landene er ikke spesielt for å gjøre klima investeringen, men å gjøre investeringer generelt.
R: Det forstår jeg. Veldig spennende.
Vil klima få en mer sentral rolle i deres mandat i fremtiden?
G: Absolutt! Det tror jeg. For noen år siden var det veldig få som tenkte i den banen, men nå har jo vi, sikkert som Norfund, har vi disse SDGer som alle våre investeringer blir mappet mot. Hvilken SDGer er inkorporert i hver investering. Er det SDG 7 eller SDG 13 og vi følger opp. Jeg tror at klima og Paris avtalen setter et framework som gjør det enklere å investere. Som ikke bare Swedfund gjør men mange i vårt marked. Man kan mappe hvis man gjør en investering så gjør man den og den og den SDGen. Forventningen er at vi skal nå de. Så det finnes et rammeverk som ikke fantes tidligere.
R: Det er sant.
G: Det er noe jeg synes er positivt.
R: Kommer dette til å forandre på deres mandat?

G: Jeg tror ikke Swedfunds mandat kommer til å forandre seg så mye. Swedfunds geografiske mandat, er at vi som alle andre DFIer, er at det er et fokus på de fattigste landene.
Det finnes for eksempel land som Swedfund investerte i tidligere, som Sør Amerika, Sør Afri ka og Botswana, og de er for utviklet nå. Deres GDP per Capita er for høy for at
vi kan investere i dem. Det er mye mer fokus på å se om
vi kan investere i de mest fattige landene. Samtidig er utfordringene størst.
Det er de landene vi investerer i. Men jeg tror det blir mer og mer et ønske fra våre eiere,
vi er jo eid av den Svenske staten, å gjøre investeringer i Mali og Burkina Faso, der alt
tar lengere tid og risikoen er høyere. Men det er der
det DFIer burde være, og ikke sitte i landene for det allerede finnes godt med kapital.
R: Der det dere gjør kan få mest utbytte.
G: Ja akkurat. Det skal ikke være at vi alle gjør investeringer i Sør-Afrika, for i Sør-Afrika finnes det godt med kapital allerede. Vi har begynt å se mer på "blended finance",
det vil si når man prøver å ta mykere kapital,
det vil si kapital som ikke har stor "return requirements", og mikse det
med andre typer kapital, som Climate Investor One. Swedfund har investert i Climate Investor One, og vi
ser på det som et interessant affairs model. Alle mulig typer kapital vil investere i klima,
men samtidig med ulike investorer og return requirements. USA (?) vil bare
ha tilbake kapitalen og et pensjonsfond vil ha større avkastning.
Vi investerte i Climate Investor One for flere grunner, men den ene grunner var at ville se om man kunne klare å få til en slik "blended finance" struktur. Alle snakker mye om at for
å nå klima målene så må man
ha privatkapital og landene vi er i kommer ikke til å nå klimamålene hvis bare DFIer investere r. Vi må finne strukturer hvor vi kan tiltrekke oss privatkapital.
Det er også en sak som har kommet mer og mer. Hva kan vi gjøre for
å mobilisere privatkapital. Det er enda en sak vi jobber aktivt for og vi kan gjøre.
R: Ja. Så hvordan tror du DFIer kan investere best mulig i klima?
G: Det korte svaret er for å nå klima målene så må man ha mer privat kapital,
for statene har ikke nok skatteinntekt for
å investere i det selv. DFIer er ikke store nok alene, så man må finne en måte tiltrekke privatk apital.
Det finnes privatkapital som ikke er så redd for risiko, eller pensjonsfond som bare vil ha 5-6% enheter. Den ene muligheten for å få dem er å se på blended finance,
men man må finne klima investeringer med skala. Som green bonds. Man kan ikke ha en green bond som er for liten. Man må ha skala.
R: Ja, en viss størrelse.
G: En skala hvor dette blir en "asset class" som folk kjenner til.
Å investere i energieffektiv real estate i Norden er noe man enkelt kan gjøre.
Det er fordi det finnes skala og folk vet om det. Det tror jeg er det viktigste man burde få til.
R: Tror du adaptation eller mitigation er viktigst for å bekjempe klima forandringene?
G: Det er vanskelig å si. Vi gjør nesten bare mitigation prosjekt.
Det er fordi de adaption prosjektene vi har sett er vanskelig å få avkastning på.
Men samtidig om
man skal være litt "simplistic", så behøver utviklingslandene adaption prosjekt. Utfordringene for dem er jo mest at de blir påvirker av klima problem uten at
det er de som har forårsaket dem. Jeg tror at utviklingslandene trenger adaption prosjekt.
Det kan være alt fra hvordan kan man hjelpe jordbrukere å bli mer effektive på sitt land og at

de derfor ikke trenger å flytte på seg. Bedre vanning for eksempel.
Det finnes et stort behov for slike prosjekter.
R: Men dere holder mest på med mitigation?
G: Ja, fordi vi trenger kommersiell avkastning. Adaptation blir mer noe for Verdensbanken. Men om
man kan kommersialisere adaption prosjekt, så er det interessant for oss.
Utviklingsland trenger virkelig det.
R: Spennende. Klima forandringene har blitt et globalt problem, og man vet jo at det er de utviklede landene som slipper ut mest "Greenhouse" gasser.
Med dette i tankene, kommer et mer klima-
fokusert mandat til å påvirket deres geografiske område?
G: Ja, jeg tror vi hvis vi hadde en enda mer klima fokusert mandat,
da skulle vi hatt mulighet til å se på prosjekter som vi nå sier nei til. Fordi de tar for lang tid eller avkastninger er ikke høy nok. Det er mer det jeg ville si.
R:OK, så dere ville forandret deres geografiske perspektiv hvis dere hadde et mer klima fokus ert mandat?
G: Ja, men det er litt vanskelig å si til hvilken grad. Vi har fokus på de fattige landene.
Det er ikke fordi vi ikke kan gå inn i hvilket som helst fattig land. Men
for oss er det bedre jo mer utfordringer som finnes der.
Men jeg tror at samtidig er det vanskelig å gjøre investeringer i de landene, uansett om det er klima eller en annen investering. Jeg tror ikke et fokus på klima eller ikke kommer til å forandre på den geografiske område vi investerer i,
men mer hvordan investeringer vi kan gjøre.
R: Det kan jeg godt forstå. Da blir det bare andre fokus områder når dere velger prosjekter.
G: Akkurat. Jeg tror for
å nå klima målene, så man finne ut hvordan man kan klare å finne klima investering med skal a.Utviklingslandene trenger investeringer helt uansett sektor, klima investeringer eller ikke. S å utfordringer er mer hvordan kan man forbedre investeringsklimaet i disse landene. Uansett h va det er liksom. Og etterpå kommer investeringene.
R: Det kan jeg godt forstå. Det er et poeng jeg skal tenke mer på.
Tusen takk for samtalen Gunilla.

Avsluttet intervjuet med smalltalk

Appendix 5: Interview with Jacob Klingemann (IFU) - 11.03.2020

Where: Via Telephone
Length: 33:53,639
Who: Regine R, Magnus M, Jacob Klingemann J,

Transcription:

J: Hey Regine

R: Hey, how are you?

J: Sorry?

R: How are you?

J: I'm good, I'm good. I mean, i don't know. Do you want both you and Magnus to be on the call?

M: I also sitting here in the same room

J: I know im a bit early, sorry for that.

R: That's not a problem.

J: I will just put on my headset, just bear with me for two seconds.

J: Is this working?

R: Yes it is. We will just like to know if it is okay with you that we record this conversation?

J: Sure

R: Okay, Thank you.

J: No problem at all.

R: Have you read the questions we send you?

J. Yes, and they are very good questions. That are not so easy to answers, but the questions are very good. It gets you thinking, I guess that the whole idea.

R: Yes it is. I know some of them are quite hard. It is just to get an idea.

J: Yeah and some of them you might get a better answer to than to others. That is just how it is.

R: Yes, that just how it is.

J: That is great. How much do you know about IFU? Clearly you know a lot about Norfund. How much have you read up on IFU? Just so you understand the context of my answers.

R: hmm. We know you are more a privately-owned investment fund.

J: yeah okay, I can give you a fly in on IFU, just five minutes

M: That would be perfect.

J: yeah, basically we are completely the same type of institution as Norfund. We are also 100% owned by the Danish government. So, our reference ministry is the minister of development. So, I think that is more or less the same as Norfund. We have our own board, a board consisting of people appointed by the minister of development and the majority of our board members are from industry and our chairman is Michael Kristoffersen, how is head of the largest Danish mortgage bank. So, you can say we have a professional board of people from the industry. What is different between Norfund and IFU is basically our approach to how we fund our activities. As you know we do not have an oil fund in Denmark or any oil. So, our government is kind of saying. Instead of putting, they are saying, dear IFU we would like you to do more business but we don't want to fund it, I mean. So, if you are to grow your business you need to attract funding from other people, and not from the tax payers. That is basically the very short, I mean. IFU received funding back in. the IFU 50- 53 years old. So, we received funding back then and the same funding is still evolving. So, there is a government funding in IFU. And then the ambition was back in 2012 as there was this meeting in Denmark to do more for climate. And then the present social government said. We would like to work more on the climate agenda so we will provide you with 50 million. I can give you in kroners because it is easier. You are a Norwegian you understand kroners. So that is no problem

R: That's no problem.

J: We can give you 300 million Danish kroners and with that money. Try to set up a fund of 600 million in total to do climate related investment. And then we worked with that. The only people who actually have any funding we could think of is the Danish pension funds. Because we already had some cooperation with the Danish pension funds as we coinvested with them in various investment funds in developing countries. And we also had a co-investment facility with some of the pension funds to do larger investments. So, we spent 2013 talking to a number of Danish investment funds and the result was we then set up the Danish climate investment fund. Which is a partnership structure, exactly like a private equity fund, so it is a limited partnership, where IFU and the Danish government committed 40% of the capital and the Danish pension funds committed 60% of the capital and the total committed capital for that fund was 1,2 billion Danish kroners.

M: Okay.

J: and that funds target was to do climate related investments mainly or you might say exclusively in the equity space. Which sat well with IFU because IFU, maybe also like Norfund, are very different from our other peers have always been mainly an equity investor and not so much a senior member to projects.

R: Yeah.

J: if I am referring to some things where you want clarification, you just ask. But I assume you are aware of what senior loans are and stuff. Otherwise you just ask, right?

R: yes, of course. We will ask.

M: Thank you.

J: I am sure you are. Okay. So that was an equity fund set-up. It was established in 2014 and had an investment period to the end of 2018 where it was fully invested. And in parallel with that, we also set-up an agri investment fund, which is also invested. And as the investment period expired, we said okay what to do next because we actually found out it was sometimes difficult. What is a climate problem, is it an agri project, is it another type of project? Because our borderline cases. So, as we wanted to build on this experience. We then set up the Danish sustainable development goals fund, which encompassed all of IFUs business. So whatever type of investment we wanted to do should basically at least from a helicopter point of view they could be funded by that fund. That fund then has its own investment committee board. So, all of our larger investments are then put forward. First to this one, and if they want to have it. It will be funded from that fund, and if they for some reason do not like it, maybe the output is too small, or the risk is too high. We can still fund it from, you can say, IFU own equity, which is 100% government funding. And the Danish sustainability goal fund is a 500 billion fund. So it somewhat larger. That started a year ago. And it supposed to be fully invested within the next 4 year. So you can say. Yes we are public. But what is always 40/60 partnership meaning 40% is IFU money 60% is venture fund capital. It is all the larger Danish institutions from ATP to PFA, to pension Denmark. There are all there. So you can say. Yes we are different from Norfund. One are the reason is simply we had to find a different way to funding our business so now we are trying to see if setting up many private equity funds is a good way forward. It has pros and cons, but that is not your agenda.

R: No.

J: but just to tell you it has done. It has pushed us very much to look for larger transactions. Because pension Denmark. I mean so where we five years back said a 100 million Danish is a large investment for our ticket. Then now a days we are saying. Well 400-500 million is fine for us. Which also makes some of the smaller projects soft. Because if you want to do a 20 million investment people say don't waste your time. Because our investment volume has grown from 500 million kroners a year to 2 billion kroner a year. And the staff have not grown in the same way. So, everybody needs to invest larger amounts. And that makes small projects softer and maybe also more other project softer. Because they normally don't need that much cash up front. So that have bearing on the overall agenda of how we operate.

R: yeah

J: Okay? That was more the intro. But it also actually saying that we work active with climate and trying to define what is a climate investment already back from 2012. So, climate have been very visible on our agenda in 8 years.

R: yeah, that is very interesting.

J: and clearly that have mainly been adaptation projects. Mainly been projects. It the whole private sector and it has to be commercial variable. Which is kind of what we do. I mean, it is. I always mix up adaptation and mitigation. I guess it is more mitigation.

R: yes, okay.

J: And we have not had or still do not have a climate goal. I mean efficiency goal. It is not like when we are doing an investment. This investment will calculate you know the ton of CO2 pr. Invested Danish kroner. It has to have a certain minimum. We don't do that. In all of our investment we do a, or we have a third party doing an evaluation of CO2 impact. It is not like we are using it as a gate. Saying okay, we will not do this one because it is no efficient enough. So that was how. So, we can label something a climate project with 1 ton of saving or 1 million ton saving. So, if are not that advanced I would say.

R: Is that something you think you would become more advanced on?

J: No, actually not. Not presently no. Because we see CO2 emission as one of the impacts, there is job creation, there is tax payments and a lot of specific things. For the time being, we are very much guided by the UN goals and the climate goal is just one among the other goals. And they are not, you know, rated where goal 1 is more important than goal 7. So, for the time being we are not guided by that, I mean clearly, we are guided as there is a lot of political attention and we also been seeing some funding. We just received 1 billion Danish kroners in additional investment capacity, that are supposed to be strictly only for the environment, for climate related projects.

R: yeah.

J: So, you can say there is a lot of political ambition to funnel more of our investment into that sector. We already have an ambition that 40% of our investment should be in renewable energy.

R: Yeah.

J: So, I mean there is some overall frameworks. But we when we have to select between energy project A or energy project B we don't use climate efficiency as a guide. There is nothing yet, in the mix that we will do that. It might happen, but we don't do that right now. We are more trying to actually understand the climate impact of our entire portfolio,

R: Yeah.

J: and have the ambition that our entire portfolio should have overall a positive impact, because clearly we have a lot of project that have a negative impact. Which is hard to avoid we you want to promote economic growth in developing countries. Because they all need cement, so can we not invest in cement? We have decided that we can invest in cement, but cement have a huge negative impact. On a portfolio level we work to try to at least have that

mitigated so we can say we do more good than bad when it comes to climate impact.

R: yeah.

J: ahhh so think, so that is where we are. I think climate will be there as only 40% overall of our target, I don't really see that increases. I mean of course politically that can change tomorrow. But, to the best of my knowledge I don't see that increasing going forward. What I do see is, what we do see is that we be more specifically guided by incentives. More guided by our stakeholders saying we what you to work more with this or that and then they ask us to allocate in either our own funding or delegated fund to specific incentives like this latest green billion we got from the government as a result of the latest agreement from the financial bill from 2020. That is not something we have promoted. It is more something that has come from an outside source.

R: yeah okay.

J: But what we have done also too substantiate our climate investments is that we have been pillar assets by the EU. I don't know if you are familiar with that. It simply, if you have to have access to EU funding and being administrator of EU funds and also soft funds. They need to do a review of your entire administration which is very complicated. We succeed with that last year so we are actually now in one project, which is not climate but could easily have been climate into EU's schemes for support to be able to engage let's say in projects that otherwise would not be commercialized if they do not get some soft funding or some technical development resources.

R: Now that is very interesting, we have not read so much about that.
J: No, that also part of the overall strategy and clearly also something that support the climate strategy. Because it boils it a bit down to question five. What are the biggest challenges? Because the biggest challenges as we see it is actually not the lack of opportunities, I mean there is so many, I mean overall, let me put it in another way. There is a lot of needs, there is fewer opportunities, and there is even fewer there are able to convert these potential opportunities into investments. So that is why, in all honesty, what we are seeing today is that, all the DFIs are competing for the same projects. We are competing with Norfund, we are competing with CDC and everybody else for the same deals. Which is, from a tax payer point a view, and from a holistic point of view is completely stupid right?

R: Yes, definitely.

J: But that is the situation. There is so much cash. I mean, the world is flooded over with cash. So if there is good deal, everybody wants be there. Of course good deals, as you know, Good deals have been well develop, have good sponsors, good parties and good counter parties. And there is a lot and lot of deals because one of these are missing. So what we see and what need really is to have companies or parties that are able to develop projects and try to make you know, make potential deals into good deals.

R: yes.

J: And that takes a lot of effort and that is a very very risky business. Where you can spend a

huge amount of cash and never succeed. And the way we try to do that, I guess we all try to do the same. So, I mean, what we also try to do now is to invest into developing companies. So, we simply can capital risk with companies that tries to develop projects, either from scratch or from mid development until they are able to be financed and then constructed. So, we see a window there for development finance capital to share that risk with the other participants that actually have more developers out there. In developing countries in a way that actually make sure that they backed and make sure they actually will be constructed. That is one thing, and then we are trying to work on to support this, and there the EU pillars is one of the to support this also with more soft financing. Either, you can say to reduce the financial risk of development but also that is another thing that we are also working on, and that is really a bottle neck. When I talk climate I mainly talk energy. I will come back to other incentives also. But in my opinion energy is so easy, when it comes to climate. But what we also see is the big stumble across Africa for example is that all the state-owned utilities are bank corrupt.

R: Yeah.

J: So, if you want to build a big wind-farm for example and sell power to Tanzanian state utilities you can easily make that deal. But then people will look at the project and say that is very nice but I mean there is no guarantee that these Tanzanian would ever pay anything to you. So the project kinds of stops there. Right?

R: Yeah.

J: You can't do it. We are also doing an incentive together with other parties to try to set up a guaranteed company. I mean, a company that will actually guarantee potential providers for energy that the energy they produce will be purchased and will also be paid. It is a guarantee yeah company that will buy energy across southern Africa. And also sell it to the various takers and trying to spread risk. It is kind of the trading / insurance to try to overcome this. And that is actually what we are promoting as the biggest thing that could over happen in at least across Africa if we are to do more renewable energy. You have this global green climate fund just sitting there in south Korea, that you might know about.

R: yeah.

J: So, you can say instead of supporting specific projects they would underride a guarantee and say we will guarantee across specific countries in Africa that if you do a project with SCOM in South Africa, you will actually be paid. And then of course whoever, receives such a guarantee would have to pay an insurance premium. Such an insurance scheme was set up. That would really reduce the risk of non-payment from the off takers of energy. That would make it much much cheaper because I mean, financial risk would be less, and it would also make it much more realistic. And much more projects would actually be constructed. Because it is the credit or the lack of credit in state utilities in a lot of countries that really is a big stumbling block for doing more renewables. And what happens then is. People do private uptakes so we do smaller projects where we sell power to the mines, to the big shopping centers, which is nice because then of course you can say we do some deals and we do some green energy. But it is not nice in the way what we actually do is we take away all the good customers from the state utilities. Because now they are buying from me so they are not

paying to the local state utilities. So the local state utilities are even worse off than they were before because all their good customers are leaving the.

R: yeah, that make sense.

J: So, that is kind of a scheme where at least whoever we talk to say some kind of insurance or credit enhancement for off-takers would really be helpful. To promote the green agenda. What we also are trying to do and we are also changing our business. Is that we see also from a climate perspective, water as also one of the big frontiers where more private capital needs to be engaged because a lot of energy is spent on producing drinking water and transporting water and also cleaning water. So, both access to water and efficiency in water producing is actually also a very important climate goal. It is also a very important developing goal and least if not a very important security goal because lack of water is what is causing a number of wars in various regions. But also from a climate perspective. And then we are trying to set up together with FMO from Holland. FMO has a setup of very interesting incentives called Climate Investor One, that you might have come across.

R: yes, I have read about it.

J: Or just google it. We are trying to set up with FMO and yourself and other interested parties. Climate investor Two. It is supposed to work a little bit in the same way but with a focus on development of bankable water projects. So to try to talk the same success which it is in the energy sector where there are many private actors and see if we are able to duplicate in the water sector over the next 10 years.

R: yeah.

J: So, that is an incentive, that have started last year and hopefully be more specific this year. Where an incentive will be setup with accesses both to funding to development and also harder capital for construction to try to do IPP like projects with water.

R: That is very interesting.

J: yeah, arhh , hmm I don't know where we are. Yeah we are somewhere around 6 because I think at least where I said.

R: I would also say that we are that question 6 now. I am following the questions.

J: yeah. Seven is, I think that very much depend on the institution. I don't think we would do a lot of these kind of indirect projects and that is mainly because we would still have a less, we receive a lot of very different funding our main objective will still be commercial variable projects. That is one thing and the other thing is that these projects if you are to do them rightly. At least you need to be very much balled or hands on in how they are operating and how they are done and how the government implement them or somebody else implement them. We simply don't have the manpower, the World Bank or IFC or somebody that large really have a lot of staff that are very specialized and extremely clever. Norfund and ourselves and the other Nordic. Yeah you know. Not that we don't know what we are doing but we don't have 10 specialists that is very good with this and 20 specialists that are very good with

that we might have 1 person or something like that. So simply from a research point view, I think we would stay with what we are doing and leave the more holistic projects for somebody else. That not said that we could not invest into, I mean we could easily, you can say, invest into a company that local would produce pumps and maybe reduce the cost from that if water pumping is an issue. So that type of commercial link, but the large and more holistic projects that tries to tackle or tries to change how a society and other stuff that is not us. That is more for the development finance, I mean, more for the owners. Because we are simply not big enough.
R: No
J: and yeah. And 8 is a very interesting one, because that is why I think we don't want to change the focus too much. Because clearly, we have a climate focus as I said at 40% needs to be in climate but we also have a policy focus. And we are actually also now being asked from our stakeholders, meaning the Danish government to do more in very poor and fragile states.

R: yeah.

J: and there you could easily argue that the climate impact is zero, because they don't have any emission today.

R: No.

J: So, actually most of our investments in those countries, I mean we can make some small investments, but other investments would actually have a negative climate impact, which is what happens when people increases their personal gross they tent to emit more.

R: Yes, exactly.

J: So, that is why we have tried to do this portfolio thing, saying okay we try if we are negative here let's try overall to offset that at least with positive investments. And then you come into this whole, I don't know if that is part of your, this whole doublet accountment thing. Because everybody is doublet accounting CO2 credits and emission like that. And there is a lot of work going on between the IFIs and the DFIs on trying to avoid this. It is very interesting and intellectually stimulating. But it is also very complicated. So there is a number of working groups on exactly both of climate affects and also other affects to try to say how do we actually in honesty report the real impact on what we are doing. Now of days we all take full credit for whatever we do right?

R: Yeah.

J: So, if we financed it and Norfund financed it, we will both take 100% credit, which it maybe not fair. But it is not completely transparent, if you don't know about it.

R: no. that is interesting.

J: and then you can say what really of course also happens is when the largest emission, countries with the largest emission. They are actually leaving the universe of DFIs right?

R: yeah.

J: I mean, very few of us are actually allowed to invest in China, we are, but in all honesty we don't do any climate investments in China. Because the Chinese don't want cash.
But also you have smaller countries like Uruguay, Chile which no more are developing nations.

R: No.

J: but clearly you can say, it would be easier to finance projects with huge reductions in those countries than in a country like China. As a country graduates our possibility to positively impact their CO2 agenda is terminated. And that is just how it is. And then you can say okay how is then doing that after they graduate. And the answer is of course, either nobody or we will see more national institutions and commercial banks of course and commercial investors. Which is kind of the way it should be. But it also leaves you know, makes it more difficult balanced portfolio because whenever you can find a lot of impact the country is very close to graduating. And then they leave and then we kind of like okay we need to do more smaller impact projects to offset the negative impact from economic growth in the more poor countries

R: Hmm, But what about countries like India? Which is still developing.

J: Yeah India, a lot of stuff is happening in India

R: Yeah and there is also a lot of, I think it is the 3rd most, the 3rd highest CO2 GHG emission in the world.

J: I mean there is actually, really a lot of green investments taking place in India. We also invested in India. Not directly in energy. And that is in all honesty because the Indian financial market or the local, I mean, there is also a lot of capital in India. I mean there is a lot of very wealthy people in India, of course India are poor but it is also a matter of distribution.

R: Yeah.

J: So what we have seen is that actually most of or the majority of projects in India is actually financed by local investors
R: Okay.

J: And there is a lot of investments going on in India. We could also do India, but our issue simply we have not yet solved the issue of how to, let's say. We have tried to stay away from a lot of currency risk, because in India you are of course 100% rupee financed, and the way it work in India, if you do a PPA, you are locked in with the same rupee price for 25 years so you are paid the same rupee amount kilo pr watt hour. For 25 years. And when we run the numbers, we find it hard to have a return and find it hard to argue that we can have an equity return that makes sense and are meeting our targets. Is it is more a return matter. So, if we only wanted to do climate impact, we could easily do India, but as we also have to have a return that would satisfies. You can say the way we are funded we find it harder to do it. So the way we have done India is, we have done some water, and then we done some more

indirect like rooftop kind of investments in the private sector where the PPA structure are different in than in big utilities.

R: yeah okay, that makes sense.

J: Yeah at least from where if are. But you know there is actually lots of stuff. India is also really really I mean, there is a lot of renewable investments in place in India. But I agree with you of course. There is also a lot of coal, and that boils down to politics and our dear friends from China financing a lot of coal.

R: The Chinese, they are everywhere.

J: Yeah but we cannot do so much about that. You just have to accept it. At least from where we are sitting.
R: That is all very interesting. We have gotten a lot of good points.

J: Yeah, and if you need anything, now you can just sit and discuss and if you need something clarified or just some questions. You just come back, no problem.

R: Thank you so much, that is very kind of you.

J: No problem.

R: This have really been a very helpful conversation and extremely interesting to learn more IFU and what you think about the whole climate change issue.

J: Yeah or at least what I think. Right? For of course you can get the party design online. But I don't think the party design is so interesting. It is just, you get a little bit more colors when I can just speak freely. Otherwise people are more diplomatic

R: Exactly, and we of course have to ask if it is okay that we use the information you have given us?

J: Sure sure sure, yeah absolutely that is the whole idea right?

R: It is, but we have to ask. Just to make sure.

J: No no I understand. Of course you should.

R: Thank you so much. It was extremely interesting.

J: My pleasure, and good luck with the assignment

R: Thank you.

M: Thank you.

R: and have a good day.

J: Thank you, and you too.

M: Thank you, take care.

J: Bye bye,

M: Bye.

Appendix 6: Interview with Richard Charlton (CDC) - 12.03.2020

Where: Via Telephone
Length: 21 min, 24 sec
Who: Regine R, Richard Charlton RC.

Transcription:

The first 3:55 is small talk not regarding the subject.

R: Have you read the questions?

RC: I have. The first question is an easy question to answer. You know. Absolutely we are investing with a climate focus. Its one of the key things for our investments you know. It is not just energy investments and other sectors. It is extremely important. I'm sure it is to almost all private institutions. Hmm. The next one, it is hard to speculate, I can give my personal view. I have been investing in infrastructure for so many years now this will forward continue a really important topic, I think. We have always said we always prefer in the infrastructure when looking at power we always prefer where they make sense from a cost and a grid perspective and they are defiantly making more sense from a cost perspective than they were 7 years ago. You know, they were expensive. The grid is the key issue and in India I think we have no problems. There is a lot of base load power and I India our focus in the power sector have 100% renewable. In Africa, there is a lot of support for renewable energy. But how the focus will change, I mean all I can say is we are investing this is a really important consideration we are continuing to identify what strategies we can invest in that both achieve positive development and climate change.

R: hmm yeah.

RC: Number three, I mean there are many challenges, but if you are looking from a climate perspective, I assume.

R: Or both, it depends on what you can answer. Many have said that just investing in general is hard. So, it doesn't matter if it is sustainable or not.

RC: I mean, I ideal investment, I mean for a DFI an ideal investment will be one that is absolutely needed in terms of the money, the partner couldn't have done it without you. Its positive from the environment and the climate, it creates jobs, it's done with a partner there

has a record, have no issues with corruption and have the right environmental political stand etc etc. All of these things. That perfect fit can basically never exists so you end up with creating random hunch of some point. If you try and look at every single angel, inevitably there are compromises to be made on different areas. There are so areas we do not compromise on. Obviously we do not compromise on corruption, that is a red line for us. But the country that mostly needs your money maybe a humble commercial risk proposition than the country that the one that don't need your money so much. Obviously, you would like to find a company that is both. It is also going to be a spectrum. And I think one of the challenges, particularly with Africa. Where I spent a lot of my time looking at investing. I would say, we often find import lot of what we see in other markets to significant less than other developed markets. In the infrastructure sector and the electricity sector. You have, significant less developed than you have in Europe, India for that matter, China etc. and so the view of things you can do, in other parts of the world. You can immediately replicate that in Africa sustainably. It is not necessary always the case. You know, we have lots of world leading investors saying we want to invest in a power grid in Africa, and the grid just can't cope with that for instant. So, I think that practicality of getting things done, versus the theory of what is done in markets which have had more developments in them. Is often one of the biggest challenges. Where international standards meet reality of local business.

R: Interesting. Will climate gain a more central role in your mandate in the future?

RC: Absolutely, the UK has allowed the muscle-target the climate as you know and it has only become more important and that sends such a clear message down from the very top of the organization.
R: Will it change your mandate?
RC: I mean, as we say we have been trying to invest in, we have been looking at climate for a number for years, there are numbers for renewable projects in the infrastructure and in other areas say in real estate we have looked at how we could make our real estate buildings more climate friendly. We have done lots of such things. So, you know it has also been there I just think it will have more focus. I don't think there will be a dramatic change in mandate. There may be more restrictions on things we want to do but I don't think there will be a dramatic change in mandate. It is not like we haven't been in this position before. In climate change, I mean question six is a huge question.

R: Yes it definitely is.

RC: I think that it is clearly a combination approach in my mind. And I don't think that saying we will only do one thing and I think that hard and fast rules for the reason I discussed about the reality in our market versus what we wish them to be sometimes. I like so to be avoided if possible. There are somethings we won't do. We do not invest in coal power stations we just won't do that. Even if, you could argue that you could create a theoretical argument that there might be a country in Africa which have no other access to reliable power that works, it has some coal resources and the emission it will create is a fraction of what developed counties have done. So, you say that country is allowed a little bit because there is no other way to stable power. You could make that theoretical argument and I know some countries which have made that. But we still say no, because of the policy we won't invest in coal power. And you know, there are other technologies as well, where we say no we won't, we won't do that. But I think that one has to look at these separately and I think that that climate change

develops, as you rightly point out. You know, that some of the poorest countries in the world are the most hard hit by climate change whether that is because of climate change or by emission from their countries or from other countries, that is another question and it is important not to mix the two. And it is important that the economies continue to grow because, you know, one mitigate to climate change is an economy that are able to withstand the shock that change will do. So, it could be the power sector, if we could invest, if we had a choice to invest in a renewable project versus non-renewable and we saw that they were solving the same issue then we would choose the renewable one if it was cheaper and it worked for the greater good. But in a number of markets there isn't room for renewable projects. Your seventh question, hmm I don't think I'm well enough equipped to answer. I guess I believe in a combination of both of these things. Hmm I think that there is a question. Let's say we are investing in Africa to what extent can our investment or to what extent do our investment make a different compare to the scale of I don't know coal power generator facilities. So, maybe that's point eight, which is an interesting one. We have certain dues and we can discuss that with our shareholders. I think and here is a personal view. I think that there is an element of fairness and justice here that I think a certain country in Africa really needs a reliable power plant that's gonna work at night and that is going to work when there is a crowd, and in that case, so just to convert anyway or a wasted by product of world expiration so it is valued. You know, that value a country has as a country and it achieve value from paths etc etc. then you know, we should ask, you know. It is only fair that country is allowed to do that when developed countries has spent so long emission significant more carbon.

R: Yeah.

RC: To support their development, so that's my personal view which is not the firms view. I mean it's a CDC view that we support gas projects where it makes sense. As part of the decarbonization of a country that's what CDC do. And we do that in fact with Norfund, where we have invested in an African power plant. So, in my personal view it is also unfair to say to a country that we will deny you what we have. And of course, there are technology advances which are exciting, so we want to invest in restoring energy. It is still a long way of variability it needs, I mean if you compare the amount of land, and again it is a personal view about, lots of people are talking about it. It might need to be the new plantations. When you look at the amount of land needed, so if you had a 400 megawatt gas pump, you would need to have a 2000 megawatt or 2 gigawatt solar plant just to provide the same amount of energy because, solar power only has a 20% conversion ratio roughly and maybe 2000 megawatt of solar is the same as 500 megawatt of gas. Yes, you could buy lots and lots of batteries and transform that power, you would need a bit more power because it leaves a bit of power in the storage and the re-energization. But if you look at the land required for 2000 megawatt of solar, you know. In certain countries, Bangladesh for instances faces massive problems about land storages, it is not just a land where you can build that. So, I think as we are getting into these big issues certain countries absolutely is not a problem, but storage will be and continue to be more and more important and it will continue to do that. And you know, a lot of developed markets, say Europeans once's and North Americans once's their nuclear base load is providing that base load. Which clearly it is not an option for most African countries, there is a little bit in South Africa. So, we will absolutely look at how we can invest in renewable in African nations. But I will be coercion against the sort of silver bullet at this stage.

R: Very interesting, and many good points.

The interview ends with a bit of small-talk.

Appendix 7: Interview with Mark Davis (Norfund) - 19.03.20

Where: Via Email
Length: -
Who: Interview Guide and Mark Davis M

Email:

1. How are you investing today, purely with focus on development or also with an eye to a climate agenda?
We are mainly focusing on development, but also looking at the climate agenda. We primarily invest in renewables, with very little fossil in the portfolio (gas power).

2. In your view, how may your investment focus change in 5 years?
It is possible that we will exclude fossil fuels (i.e. gas power) entirely.
It is also possible that we may invest in resilience, and also consider agricultural investments that are robust to climate change

3. What are the biggest challenges and opportunities when investing sustainably in developing countries?
Biggest challenge is market structure and credit risk.
Biggest opportunity is demand growth.

4. Will climate gain a more central role in your mandate in the future?
Difficult to say with certainty, but it is definitely possible.

5. If so, how will it change your mandate/focus points?
See point 2.
We may also start to stress test the portfolio for climate risk.

6. How do you believe a Development Finance Institution can most efficiently invest in climate change?
By investing in renewables, climate robust agriculture, water security.

7. Would you say adaptation or mitigation towards climate change is more important in minimizing global extreme poverty? Why?
Adaptation is important, as poor people are vulnerable to climate change.
Emissions from low income countries are relatively low, and it could be argued that they should not be required to mitigate. But it is also important to note that much of future growth in energy demand will come in low and lower-middle income countries, and so putting these countries on a path to low emissions future is important.
Note also that poverty reduction in itself helps resilience, since poor people are most vulnerable.

8. Climate change is a global issue, and it is known that the developed countries are the biggest contributors to greenhouse gas emissions. With this in mind, would adopting a more climate-focused mandate affect your geographical focus areas?
Probably not. We would most likely get the mandate for climate related investments in poor countries.

Appendix 8: Interview with Birgit Edlefsen (FMO) - 20.03.20

Where: Via Email
Length: -
Who: Interview Guide and Birgit Edlefsen B

Email:

With the help of colleagues I was able to collect some information which is hopefully of help to you:

1. please find attached the section which will be published in FMO's annual report shortly (later this month) -> pls keep confidential until FMO has published its Annual Report 2019!
2. furthermore and through this link https://stories.fmo.nl/our-1-point-5-degree-pathway/ you can find further information on FMO approaching climate related investment decisions.
3. lastly some additional feedback on some of your questions (some of them you can also see back in the attached document!)

#1. How are you investing today, purely with focus on development or also with an eye to a climate agenda
Climate Action is one of the key pillars of our 2025 strategy, and we acknowledge we need to demonstrate our responsibility and foresight in considering climate issues. This goes beyond assessing the impact of our activities on the environment as climate change may affect our clients who are vulnerable to the material consequences and the transition to a low-carbon economy

#3. What are the biggest challenges and opportunities when investing sustainably in developing countries?
Climate change poses risks to the economies and markets in which we operate. Our clients' performance can be impacted by physical risks, such as extreme weather, or policy, legal, technology, market and reputational risks arising from the shift to a low-carbon and climate-resilient economy. While this may present investment and business risks for FMO, it also creates opportunities to help clients become more resource and energy efficient, reduce GHG emissions and transition to low-carbon solutions.
We continuously assess how this may affect our business over the short, medium, and long term, but our strategy already considers:
•Adapting our portfolio: To reduce climate risks and seize opportunities, we are seeking to grow our green portfolio. We finance green projects in the energy and agricultural sector, provide green credit lines to financial institutions, contribute to green funds and issue green bonds. In line with the Paris Agreement, we also committed to align our portfolio with the 1.5-degree pathway. We further aim to improve GHG efficiency of our portfolio and finance carbon negative transactions. For the post-2025 period, more drastic choices may be needed,

in line with the Dutch Climate Agreement.
•Supporting our clients: We work with clients like Access Bank and Banban Gona on climate-related risk management, sharing experiences to better manage climate risks and opportunities.
•Mobilizing climate capital: FMO blends and mobilizes climate funds, for example via Climate Investor One, ElectriFI, the Dutch Fund for Climate and Development (DFCD). We are also increasing the climate focus in AEF and Building Prospect.
•Sectoral engagement: We are transparent about our approach to climate and engage other organizations on this topic. FMO is an active member of the Partnership for Carbon Accounting Financials, seeking to create an open-source global carbon accounting standard. We also cooperate with other bilateral and multilateral development banks to harmonize GHG accounting and improve our climate risks and opportunities management. FMO and the Dutch financial sector have pledged to report the footprint of relevant assets as of 2020 and set reduction targets from 2022 onwards through the Dutch Climate Agreement.

In conclusion you can see that FMO is taking Climate Change and related risks very serious in it way of doing business, defining strategies, when taking investment decisions etc.
Please let us know in case of further questions!

Appendix 9: Interview with Stephan Diefenthal (DEG) - 24.03.20

Where: Via Email
Length: -
Who: Interview Guide and Stephan Diefenthal S

Email:
Questions:
1. How are you investing today, purely with focus on development or also with an eye to a climate agenda?
--> main focus is on development but climate is becoming more and more important and compliance of our projects with international E&S (including climate) standards is a pre-condition for all our projects.

2. In your view, how may your investment focus change in 5 years?
--> it will very much change and I would expect that our activities in climate related projects will significantly increase.

3. What are the biggest challenges and opportunities when investing sustainably in developing countries?
--> Challenges: finding good and viable projects; weak economies and government capacities. Opportunities: renewable energy is becoming cheaper and can therefore be afforded by much more development countries, new technologies may also be used off-grid

4. Will climate gain a more central role in your mandate in the future?
--> yes, I would expect this

5. If so, how will it change your mandate/focus points?
--> total portfolio will be measured in terms of climate protection (CO2 emissions, etc.), new business targets/strategy for renewable energy, energy efficiency etc.

6. How do you believe a Development Finance Institution can most efficiently invest in climate change?
--> cf. Question 5: stronger focus on renewable energy, energy efficiency projects, etc.

7. Would you say adaptation or mitigation towards climate change is more important in minimizing global extreme poverty? Why?
--> no, I would personally not agree with this statement

8. Climate change is a global issue, and it is known that the developed countries are the biggest contributors to greenhouse gas emissions. With this in mind, would adopting a more climate-focused mandate affect your geographical focus areas?
--> no, I don't believe since there will be many business opportunities in development countries, too.

Appendix 10: 2020 DAC List of ODA Recipients

Source: http://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DAC-List-of-ODA-Recipients-for-reporting-2020-flows.pdf

DAC List of ODA Recipients
Effective for reporting on 2020 flows

Least Developed Countries	Other Low Income Countries (per capita GNI <= $1 005 in 2016)	Lower Middle Income Countries and Territories (per capita GNI $1 006-$3 955 in 2016)	Upper Middle Income Countries and Territories (per capita GNI $3 956-$12 235 in 2016)
Afghanistan	Democratic People's Republic of Korea	Armenia	Albania
Angola[1]	Zimbabwe	Bolivia	Algeria
Bangladesh		Cabo Verde	Antigua and Barbuda[2]
Benin		Cameroon	Argentina
Bhutan[1]		Congo	Azerbaijan
Burkina Faso		Côte d'Ivoire	Belarus
Burundi		Egypt	Belize
Cambodia		El Salvador	Bosnia and Herzegovina
Central African Republic		Eswatini	Botswana
Chad		Georgia	Brazil
Comoros		Ghana	China (People's Republic of)
Democratic Republic of the Congo		Guatemala	Colombia
Djibouti		Honduras	Costa Rica
Eritrea		India	Cuba
Ethiopia		Indonesia	Dominica
Gambia		Jordan	Dominican Republic
Guinea		Kenya	Ecuador
Guinea-Bissau		Kosovo	Equatorial Guinea
Haiti		Kyrgyzstan	Fiji
Kiribati		Micronesia	Gabon
Lao People's Democratic Republic		Moldova	Grenada
Lesotho		Mongolia	Guyana
Liberia		Morocco	Iran
Madagascar		Nicaragua	Iraq
Malawi		Nigeria	Jamaica
Mali		Pakistan	Kazakhstan
Mauritania		Papua New Guinea	Lebanon
Mozambique		Philippines	Libya
Myanmar		Sri Lanka	Malaysia
Nepal		Syrian Arab Republic	Maldives
Niger		Tajikistan	Marshall Islands
Rwanda		Tokelau	Mauritius

Sao Tome and Principe[1]		Tunisia	Mexico
Senegal		Ukraine	Montenegro
Sierra Leone		Uzbekistan	Montserrat
Solomon Islands[1]		Viet Nam	Namibia
Somalia		West Bank and Gaza Strip	Nauru
South Sudan			Niue
Sudan			North Macedonia
Tanzania			Palau[2]
Timor-Leste			Panama[2]
Togo			Paraguay
Tuvalu			Peru
Uganda			Saint Helena
Vanuatu[1]			Saint Lucia
Yemen			Saint Vincent and the Grenadines
Zambia			Samoa
			Serbia
			South Africa
			Suriname
			Thailand
			Tonga
			Turkey
			Turkmenistan
			Venezuela
			Wallis and Futuna

(1) General Assembly resolution A/RES/70/253, adopted on 12 February 2016, decided that Angola will graduate on 12 February 2021. General Assembly resolution A/73/L.40/Rev.1, adopted on 13 December 2018, decided that Bhutan will graduate on 13 december 2023 and that Sao Tomé and Principe and Solomon Islands will graduate on 13 December 2024. General Assembly resolution A/RES/68/18, adopted on 4 December 2013, decided that Vanuatu will graduate on 4 December 2017. General Assembly resolution A/RES/70/78, adopted on 9 December 2015, decided to extend the preparatory period before graduation for Vanuatu by three years, until 4 December 2020, due to the unique disruption caused to the economic and social progress of Vanuatu by Cyclone Pam.

(2) According to World Bank data from 10 July 2019, Antigua and Barbuda, Palau and Panama exceeded the high-income threshold in 2017 and 2018. In accordance with the DAC rules for revision of this List, if they remain high income countries until 2019, they will be proposed for graduation from the List in the 2020 review.

Appendix 11: Norfund's Additionality Framework (received from Norfund)

ADDITIONALITY FRAMEWORK

Skrift

The additionality of new investments is discussed in the Investment Committee as part of the Clearance in Principle decision. Each investment paper includes a narrative description of additionality and an assessment against Norfund's additionality ambitions. The ambitions build on OECD DAC's definition and includes indicators on financial and value additionality.

The table below lists the ambitions and the corresponding indicators and categories. Categories are listed in descending order, starting with the most additional category.

The categories of the first four indicators follow from the country of operation and are listed in the annex. Regional investments are considered to fulfil the ambition statement if more than 50 percent of the investment is targeting countries in categories highlighted in bold.

The assessment results in an additionality score (0-10). It is highly recommended to use the "Additionality calculator" to calculate the score.

*Investments with an **additionality score below 4** may only be done if accompanied by a clear and substantiated case for additionality beyond what is captured by the framework and/or substantial and well documented development effects expected as a result of Norfund's investment.*

***Replacement capital** investments can only be done in cases where Norfund takes an active role to increase the investment's development effects and require a detailed description of how this will be done specifically.*

Type	Ambition	Indicator	Definition and scores
	Investing in the poorest countries	Country income group	'Country income group' is an indicator of the economic income status of the investment country. Three categories are defined based on OECD-DAC list of ODA recipients: • LDC/ LIC (per capita GNI <= $1 005) - 1 • LMIC (per capita GNI $1 006-$3 955) – 0.5 • UMIC (per capita GNI $3 956-$12 235) - 0
	Investing in capital constrained markets	Domestic credit to private sector	'Domestic credit to private sector' refers to financial resources provided to the private sector by financial corporations as % of GDP and is an indicator of the level of financing available in the domestic market. Four categories are defined based on the World Bank's indicator: • Very low (0-25% of GDP) - 1 • Low (26-50% of GDP) – 0.5 • Moderate (51-75% of GDP) – 0.5 • High (>75 % of GDP) - 0
	Investing in risky markets	Country credit rating	'Country credit rating' is an indicator of the risk level associated with the investment environment. Three categories are defined based on ratings from external agencies: • <B+ (1) • BB to BB+ (0.5) • >BBB- (0)
	Investing in difficult business environments	Doing Business	'Doing business' is an indicator of the ease of doing business in the country of operation. Four categories are defined based on World Bank's Doing Business Distance to Frontier Scores: • Very hard (lowest quartile of countries) - 1 • Hard (second lowest quartile of countries) – 0.5 • Medium (second highest quartile of countries) – 0.5 • Easy (highest quartile of countries) - 0

	Providing scarce capital	Instrument	'Instrument' describes the type of financing Norfund has provided to the investee. Three categories are defined: • Equity - 1 • Funds (equity) – 1 • Subordinated/convertible debt – 0.5 • Local currency debt – 0.5 • Debt - 0 • Guarantees - 0
	Contributing to starting new business activity	Greenfield	'Greenfield' is an indicator of whether the investment supports a new or builds on an already-established activity. First-generation funds and start-up of a new subsidiary from an existing company in a new country are considered greenfield investments. Two categories are defined: • Yes: Investment supports a new activity - 1 • No: Investment supports an already-established activity - 0
	Mobilising private investors	Mobilisation	'Mobilisation' refers to amounts mobilised (equity or debt) *from commercial sources* (does not include other DFIs) due to Norfund's commitment. Mobilisation can refer to funds mobilised at time of investment, or funds that is expected to be mobilised due to Norfund's early involvement in a project. Three categories are defined: • Mobilisation at time of investment - 1 • Mobilisation expected: First DFI involved or part of 1st close – 0.5 • No mobilisation or 2nd/3rd close - 0

Appendix 12: Internal Rate of Return (IRR) Norfund (from Operation Report 2018)

Internal Rate of Return (IRR) in investment currency	Since inception 1997–2018	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Clean Energy	7.0	7.1	19.5	0.1	2	-9	-4	12	10	11	3
Financial Institutions	6.8	3.3	5.8	8.2	12	6	4	9	6	9	6
SME Funds	3.1	-14.4	-4.0	-1.6	0	-3	12	9	3	10	5
Food and Agribusiness	-5.2	-5.0	4.1	-5.2	-4	-10	-4	-10	2	7	12
Total	**5.8**	**4.6**	**14.0**	**1.6**	**3.5**	**-6**	**-1**	**10**	**8**	**10**	**4**

Appendix 13: Power Point Presentation received from Norfund

Norfund Value Creation

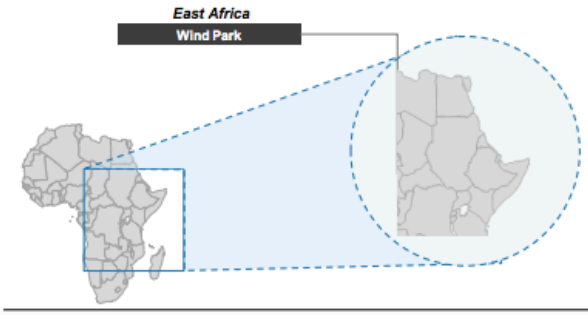
NOMURA

Case Study – Wind Park in East Africa

- **Partnership established in 2012 between Norfund and 5 international partners to develop, at the time, Africa's largest wind farm**
- **Investment generated a return of 21% for Norfund**

Overview

- Partnership established in 2012
- Africa's largest wind park at the time of investment
- Construction and commissioning commitment
- Norfund owned 12% in the project. Other shareholders were 5 international partners
- Project enabled the closure of 3 heavy fuel oil power plants
- Norfund exited investment 6 months after commissioning



Financial Profile

Initial Equity:
EUR 17m

Equity at Exit:
EUR 75m

Investment Returns

NPV at 13% IRR:
EUR 13m

IRR in EUR:
21%

10

sn power

Norfund Value Creation

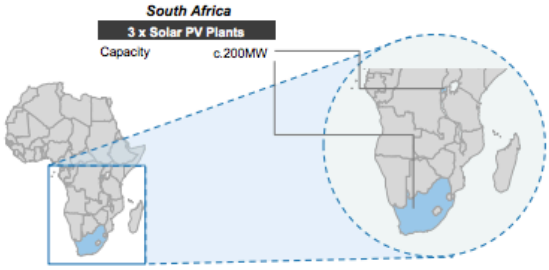
NOMURA

Case Study – KLP Norfund Investments (KNI) Partnership with Scatec Solar

- **Partnership established in 2013 between KNI, Scatec Solar and local financial investors to develop 3 solar PV plants in South Africa with a capacity of c.200MW**
- **Investment generated a return of 35% for Norfund**

Overview

- Partnership established in 2013
- 3 x solar PV plants in South Africa totalling c.200MW
- 20 year PPA in local currency
- Operations began in 2014
- Ownership:
  - KNI ownership: 29%
  - Scatec Solar: 39%
  - Local financial investors: 32%
- Norfund exited investment in 2018



Financial Profile

Initial Equity:
ZAR 230m

Distributions:
ZAR 230m

Equity at Exit:
ZAR 650m

Investment Returns

NPV at 14% IRR:
ZAR 250m

IRR in ZAR:
35%

snpower

Appendix 14: Norfund's Country Additionality Scores (received from Norfund)

Norfund

Annex 1 – Country additionality scores 2020 (strategy countries)

Country	ODA category	ODA score	Domestic credit	Domestic credit score	Credit rating	Credit score	Doing business	Doing business score	Total score
Angola	LDC	1	Very low	1	B-	1	Very Hard	1	4
Bangladesh	LDC	1	Low	0,5	BB-	0,5	Very Hard	1	3
Benin	LDC	1	Very low	1	B	1	Very Hard	1	4
Burkina Faso	LDC	1	Low	0,5	B-	1	Very Hard	1	3,5
Burundi	LDC	1	Very low	1	n.r.	1	Very Hard	1	4
Cambodia	LDC	1	High	0	B	1	Very Hard	1	3
Cameroon	LMIC	0,5	Very low	1	B	1	Very Hard	1	3,5
Colombia	UMIC	0	Moderate	0,5	BBB-	0	Medium	0,5	1
Costa Rica	UMIC	0	Moderate	0,5	BB-	0,5	Medium	0,5	1,5
Dominican Republic	UMIC	0	Low	0,5	BB-	0,5	Hard	0,5	1,5
El Salvador	LMIC	0,5	Moderate	0,5	B-	1	Medium	0,5	2,5
Ethiopia	LDC	1	Very low	1	B	1	Very Hard	1	4
Ghana	LMIC	0,5	Very low	1	B-	1	Hard	0,5	3
Guatemala	LMIC	0,5	Low	0,5	BB	0,5	Hard	0,5	2
Guinea	LDC	1	Very low	1	n.r.	1	Very Hard	1	4
Haiti	LDC	1	Very low	1	n.r.	1	Very Hard	1	4
Honduras	LMIC	0,5	Moderate	0,5	B+	1	Hard	0,5	2,5
India	LMIC	0,5	Low	0,5	BBB-	0	Medium	0,5	1,5
Indonesia	LMIC	0,5	Low	0,5	BBB	0	Medium	0,5	1,5
Ivory Coast	LMIC	0,5	Low	0,5	n.r.	1	Hard	0,5	2,5
Kenya	LMIC	0,5	Low	0,5	B+	1	Medium	0,5	2,5

Laos	LDC	1	Low	0,5	n.r.	1	Very Hard	1	3,5
Lesotho	LDC	1	Very low	1	BB-	0,5	Hard	0,5	3
Liberia	LDC	1	Very low	1	n.r.	1	Very Hard	1	4
Madagascar	LDC	1	Very low	1	n.r.	1	Very Hard	1	4
Malawi	LDC	1	Very low	1	n.r.	1	Hard	0,5	3,5
Mali	LDC	1	Low	0,5	n.r.	1	Very Hard	1	3,5
Mozambique	LDC	1	Very low	1	D	1	Hard	0,5	3,5
Myanmar	LDC	1	Very low	1	n.r.	1	Very Hard	1	4
Nepal	LDC	1	High	0	n.r.	1	Medium	0,5	2,5
Nicaragua	LMIC	0,5	Low	0,5	B+	1	Hard	0,5	2,5
Niger	LDC	1	Very low	1	n.r.	1	Hard	0,5	3,5
Nigeria	LMIC	0,5	Very low	1	B	1	Hard	0,5	3
Panama	UMIC	0	High	0	BBB	0	Medium	0,5	0,5
Philippines	LMIC	0,5	Low	0,5	BBB+	0	Medium	0,5	1,5
Rwanda	LDC	1	Very low	1	B+	1	Easy	0	3
Senegal	LDC	1	Low	0,5	B+	1	Hard	0,5	3
Sierra Leone	LDC	1	Very low	1	n.r.	1	Very Hard	1	4
Somalia	LDC	1	Very low	1	n.r.	1	Very Hard	1	4
South Africa	UMIC	0	High	0	BB	0,5	Medium	0,5	1
South Sudan	LDC	1	Very low	1	n.r.	1	Very Hard	1	4
Sri Lanka	LMIC	0,5	Low	0,5	B+	1	Hard	0,5	2,5
Swaziland	LMIC	0,5	Very low	1	n.r.	1	Hard	0,5	3
Tanzania	LDC	1	Very low	1	n.r.	1	Hard	0,5	3,5
Togo	LDC	1	Low	0,5	B-	1	Hard	0,5	3
Uganda	LDC	1	Very low	1	B	1	Hard	0,5	3,5
Vietnam	LMIC	0,5	High	0	BB	0,5	Medium	0,5	1,5
Zambia	LDC	1	Very low	1	CCC+	1	Medium	0,5	3,5
Zimbabwe	LIC	1	Very low	1	n.r.	1	Hard	0,5	3,5