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Voluntary Environmental Disclosure

A study of the Carbon Disclosure Project

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Abstract

Events, such as increased risks of drought and flooding, that scientist have associated with climate change can have serious impacts on the physical environment, society, and the economy. In the past companies, despite their significant contribution to greenhouse gas emissions were largely excluded in the search for solutions. However, increasing awareness among politicians and civil society has resulted in a call for greater responsibility of economic actors in mitigating climate change. In addition to mandatory measures (e.g. regulations) voluntary environmental programmes (VEP) have been developed, including the voluntary disclosure of environmental data. VEPs are often classified as so-called green clubs which encourage members to engage in progressive environmental actions that go beyond the regulatory status quo, in return for which they benefit from affiliation with the club's positive brand image and reputation. This study finds that the CDP qualifies as a green club.

This thesis aims to contribute to the understanding of why companies, in particular in the clean technology sector, engage in voluntary environmental disclosure and how they can benefit from this, using the Carbon Disclosure Project (CDP), an independent non-profit organisation that gathers information on greenhouse gas emissions of companies on behalf of investors, as an example. From the literature review and interviews with eleven reference companies participating in the CDP a set of internal and external drivers for engaging in VED has been derived. Furthermore, a list of benefits, categorised according to financial, legal, competitive, and strategic aspects, has been compiled. An in-depth case study of The Company, a Swedish cleantech corporation interested in reporting to the CDP, allowed studying the information needs the CDP puts on respondents as well as potential differences concerning costs and benefits of participation compared to non-cleantech businesses due to the environmentally friendly nature of their products.

Keywords: Voluntary environmental disclosure, green clubs, Carbon Disclosure Project, voluntary environmental programme, sustainability report

Executive Summary

Events that scientist have associated with climate change, such as increased risks of drought and flooding, rising sea levels, and changing landscapes, can have serious impacts on the physical environment, society, and the economy(cf. IPCC, 2007; Brown & Funk, 2008; Hanewinkel, Hummel & Cullmann, 2010; Martin, 2010). In the past companies, despite their significant contribution to greenhouse gas emissions were largely excluded in the search for solutions. However, increasing awareness among politicians and civil society has resulted in a call for greater responsibility of economic actors in mitigating climate change. A broad variety of both mandatory and voluntary measures (including policies, regulatory and information instruments) have been developed to hold corporations accountable for their actions (Hibbitt & Collison, 2004; Weinhofer & Hoffmann, 2010). Voluntary environmental programmes (VEP) are often classified as so-called green clubs, i.e. clubs which encourage members to engage in progressive environmental actions that go beyond the regulatory status quo, in return for which they benefit from affiliation with the club's positive brand image and reputation. This research focuses on voluntary environmental disclosure (VED) as an example of VEPs and in particular on the Carbon Disclosure Project (CDP). The CDP, founded in the United Kingdom in 2000, is an independent non-profit organisation that gathers information on greenhouse gas emissions and water use of companies on behalf of the public as well as 655 institutional investors with US $78 trillion in assets. This thesis examines the *CDP Climate Change Programme for Companies* (also called Investor CDP). Data is compiled based on annual information requests pertaining to greenhouse gas emissions, emission targets, reduction strategies and perceived corporate climate change risks send out to companies worldwide. To date the CDP is the single largest database for corporate climate change related information and greenhouse gas emissions. With the exception of a few, mainly descriptive articles concerning its institutional set-up, the CDP has not yet been the subject of in-depth academic research (cf. Andrew & Cortese, 2011; Armstrong, 2011).

While companies have no choice but to participate in mandatory environmental disclosure programmes, for example as part of a license to operate, it is interesting to examine VED to understand why companies choose to go beyond mere legislative requirements. Following business logic corporations should only engage in activities that yield benefits (both tangible and intangible) to balance the added costs of gathering and disclosing information. To date there is very little in the scientific literature relating to the question of how businesses justify the additional costs of voluntary reporting activities and what type of added value may be attributed to participation in such schemes (cf. Cong & Freedman, 2011; de Villiers & van Staden, 2011). Even less attention has been paid to this issue when it comes to companies in the clean technology (cleantech) sector, i.e. companies that provide environmentally friendly products and services (e.g. renewable energy) and their rationales for adopting carbon-reporting instruments.

This thesis aims to contribute to the understanding of why companies, in particular in the clean technology sector, engage in VED and how they can benefit from this, using the CDP as an example. Based on this the following research questions were devolped:

RQ1 What are the main drivers for and benefits of companies participating in voluntary environmental disclosure in general and the Carbon Disclosure Project in particular?

RQ2 Why should the case company participate in the Carbon Disclosure Project?

RQ3 How can the case company implement the Carbon Disclosure Project?

To address the research questions the literature review on VED and the CDP was followed by an analysis of eleven reference companies' experiences with reporting to the CDP, including drivers and benefits. Then, The Company, a Swedish cleantech corporation offering non-fossil fuel heating products, was used as a case study to examine the information needs the CDP puts on respondents as well as potential differences concerning costs and benefits of participation compared to non-cleantech businesses. Finally, drawing on the theoretical framework of Green Club Theory this study finds that the CDP qualifies as a green club.

The findings from the reference companies suggest that a number of internal and external drivers influence corporations' decision to participate in the CDP. Major rationales include direct requests from important investors, indirect pressure from external stakeholders, increased transparency, credibility and recognition, improved communication, and the opportunity to benchmark the own environmental performance to competitors.

With regard to benefits, three sources of information (academic literature, CDP documents, and interviews with reference companies) were used to delineate what kind of advantages responding to the CDP has for participants. They can be grouped into financial, legal, competitive, and strategic aspects. Academic literature and the CDP to a great extent concur in their portrayal of the benefits, emphasising inter alia, lower information costs for green investors, short- and long-term savings (e.g. through reduced greenhouse gas emissions), leverage in relevant policy-making processes, improved environmental performance, and identification of new market opportunities. The reference companies, in contrast, provide additional aspects, such as the benefits associated with sharing knowledge and best practices during CDP presentations and workshops, the simplification and streamlining of sustainability reporting processes, or the significance of integrating different voluntary disclosure schemes. At the same time, some of their statements conflict with findings from the other two sources. Contrary to benefits discovered by academics and the CDP, none of the interview subjects mention legal benefits. Even more surprisingly is that the majority of interviewees do not believe that responding to the CDP resulted in any tangible, monetary benefits.

The analysis of the case company shows that their internal sustainability questionnaire delivers a sufficient amount of information and data to respond to the Investor CDP. Furthermore, the study finds that participating in the CDP could be beneficial for The Company. It could help to improve The Company's carbon management system by encouraging management to address climate change related issues, such as risk and opportunity. Moreover, increasing transparency is likely to positively affect investor relations and increase trust in The Company's brand. In this context, The Company has the potential to capitalise on the environmentally friendly nature of the majority of their product portfolio. Combining these product features with the voluntary disclosure of their own emissions could allow The Company to strengthen their position as a cleantech company and give credibility to their operations. However, one could also argue that gaining the goodwill of external stakeholders through affiliation with a green club is less necessary for cleantech corporations, seeing as non-cleantech companies often use green clubs to protect their reputation and brand image from attacks targeted at, for example, questionable environmental practices. Furthermore, CDP participation could be used as a marketing and PR tool. Assessing potential financial benefits is not possible within the scope of this thesis and is, as has been pointed out by most reference companies, in general a difficult task given the integration of multiple environmental activities and programmes within most corporate environmental management systems.

While the case study offers no information on potential causal links regarding cleantech companies and the benefits they may derive from participation in VEPs, the analysis of The Company suggest that cleantech corporations may be in a better position compared to non-cleantech businesses when it comes to marketing and engagement with external

environmentally interested stakeholders. However all in all, one of the primary lessons from this study is that the benefits associated with the CDP depend on the specific circumstances of each company, such as the nature of their products/ services or their relationship with investors, and that further, representative research of cleantech companies is needed.

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Abbreviations

B2B	Business to business
B2C	Business to customer
BU	Business unit
CDLI	Carbon Disclosure Leadership Index
CDP	Carbon Disclosure Project
Cleantech	Clean technology
CPLI	Carbon Performance Leadership Index
CSR	Corporate Social Responsibility
EMS	Environmental Management System
FSC	Forest Stewardship Council
Global 500	500 largest companies worldwide
GRI	Global Reporting Initiative
Investor CDP	CDP Climate Change Programme for Companies
ISO	International Standard Organization
NGO	Non-governmental organisations
PwC	Pricewaterhouse Coopers
RSPO	Roundtable on Sustainable Palm Oil
VEP	Voluntary environmental programme
Vestas	Vestas Wind Systems
VOC	Volatile organic compounds

1 Introduction

Changing landscapes, rising sea levels, stronger storms and increased risk of floods and droughts – these are just a few examples of the impacts scientists have associated with climate change in the last decade (IPCC, 2007). The results of a changing climate can have serious implications for all levels of life on earth: most notably on the environment (e.g. shifting biomes, desertification) and society (e.g. climate change induced migration) (Hanewinkel, Hummel & Cullmann, 2010; Martin, 2010; McLeman & Smit, 2006; Oliver-Smith, 2012; Salazar & Nobre, 2010). However, there are also effects on national and global economies. Negative repercussions range from lost profits from poor harvests (Brown & Funk, 2008; Chakraborty & Newton, 2011) over high damages from climate change related catastrophes (Repetto & Easton, 2010) to increasing abatement costs (Holzman, 2009). At the same time corporations and economic activities are one of the major sources of greenhouse gas emissions responsible for climate change.

While in the past companies (despite their contribution to greenhouse gas emissions) were largely excluded in the search for solutions, increasing awareness among politicians and civil society has led to closer scrutiny of economic activities, resulting in a call for greater responsibility of economic actors in mitigating climate change (Lee, 2012; Sprengel & Busch, 2011). A broad variety of both mandatory and voluntary measures (including policies, regulatory and information instruments) has been developed to hold corporations accountable for their actions (Hibbitt & Collison, 2004; Weinhofer & Hoffmann, 2010). While mandatory reporting schemes usually seek to ensure that companies fulfil legislative requirements (e.g. emission quotas) in order to maintain a certain environmental quality, voluntary mechanisms go beyond the regulatory status quo. In general, literature cites two broad categories of drivers for voluntary corporate environmental disclosure: reactive (e.g. stakeholder interests and pressure) and proactive (e.g. competitive advantage, risk mitigation, ethical considerations) (Armstrong, 2011; Okereke, 2007). This research focuses on corporate environmental disclosure as an example of voluntary environmental schemes and in particular on the Carbon Disclosure Project (CDP). The CDP, founded in the United Kingdom in 2000, is an independent non-profit organisation that gathers information on greenhouse gas emissions and water use of companies worldwide on behalf of the public as well as 655 institutional investors with US $78 trillion in assets (CDP, 2013d). This thesis focuses solely on the *CDP Climate Change Programme for Companies* (also called Investor CDP). Data is compiled based on annual information requests pertaining to greenhouse gas emissions, emission targets, reduction strategies and perceived corporate climate change risks sent out to companies worldwide. In 2012, over 3,000 companies and 81% of the 500 largest companies (Global 500) participated (CDP, 2012d).

1.1 Problem definition

While companies have no choice but to participate in mandatory environmental disclosure programmes, for example as part of a license to operate, green accounts or more recently the European Union Emission Trading Scheme (Hibbitt & Collison, 2004), it is interesting to examine voluntary environmental disclosure (VED) schemes, such as the Carbon Disclosure Project. Why do companies choose to go beyond mere legislative requirements by taking part in such programmes? Following business logic companies should only engage in activities that yield benefits (both tangible and intangible) to balance the added costs of gathering and disclosing information. Although there are some studies regarding rationales of companies for taking this type of environment-related decisions (Harmes, 2011; Kolk, Levy & Pinske, 2008; Stanny & Ely, 2008) there is very little in the scientific literature

relating to the question of how businesses justify the additional costs of voluntary reporting[1] activities and what type of tangible or intangible added value may be attributed to voluntary reporting initiatives (Armstrong, 2011; Cong & Freedman, 2011; de Villiers & van Staden, 2011; Harmes, 2011). Even less attention has been paid to this issue when it comes to companies in the clean technology (cleantech) sector, i.e. companies that provide environmentally friendly products and services, renewable energy or cleaner production technologies, and their rationales for adopting carbon-reporting instruments (Harmes, 2011). The CDP is an interesting example of a voluntary environmental disclosure scheme: to date it is the single largest database for corporate climate change related information and greenhouse gas emissions (CDP, 2012e). With the exception of a few, mainly descriptive articles concerning its institutional set-up, the CDP has not yet been the subject of in-depth academic research (cf. Andrew & Cortese, 2011; Armstrong, 2011).

The Company[2], the market leader for non-fossil fuel heating products for both industrial and domestic purposes in Scandinavia, is an example of a cleantech company. Its products are considered to be environmentally friendly in that they help to reduce greenhouse gas emissions. Furthermore, strong commitment to social and environmental responsibility is part of the company's values, integrated in its business principles and corporate culture and practiced in the Sustainability Report based on the Global Reporting Initiative (GRI) (The Company, 2013a). Lately, the corporate environmental management team has contemplated participation in the Investor CDP. Against this background it is interesting to analyse what potential benefits the company could derive from joining the CDP and on what grounds the decision to voluntarily report carbon emissions could be made.

1.2 Research questions and objectives

This paper aims to contribute to the understanding of why companies, in particular in the clean technology sector, decide to engage in voluntary environmental disclosure and how they can benefit from this behaviour. The research focuses on the Carbon Disclosure Project, as an example of voluntary environmental disclosure. In addition, this thesis seeks to advise the case company on how participation in this particular programme can benefit them. Based on this the following research questions have been developed:

RQ1 What are the main drivers for and benefits of companies participating in voluntary environmental disclosure in general and the Carbon Disclosure Project in particular?

RQ2 Why should the case company participate in the Carbon Disclosure Project?

RQ3 How can the case company implement the Carbon Disclosure Project?

In order to address these questions the following objectives will be pursued:

(1) To understand how the Carbon Disclosure Project functions.

(2) To understand what added value participating in voluntary environmental disclosure schemes can offer to a company.

(3) To describe the case company and understand how its activities and products relate to the emission of carbon.

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[1] Voluntary environmental reporting and voluntary environmental disclosure are used interchangeably in this thesis.

[2] The case company preferred to remain anonymous and shall therefore be referred to as The Company throughout this thesis.

(4) To analyse how the case company could benefit from participating in the Carbon Disclosure Project.

(5) To give recommendations to the case company regarding potential ways of implementing the Carbon Disclosure Project.

Figure 1-1 visualises the research questions.

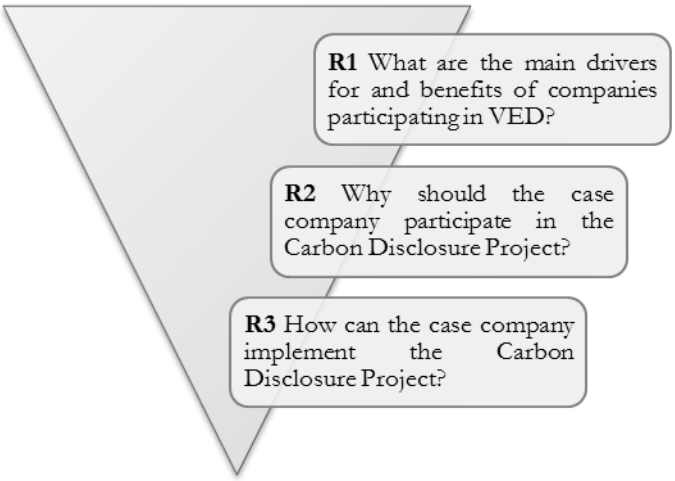

Figure 1-1 Research funnel

1.3 Methodology

This thesis aims to answer the research questions using qualitative research methods. An in-depth literature review of relevant academic literature lays the groundwork for the case study. Key themes are introduced and the current state or research is synthesised. Furthermore, the theoretical framework of analysis is introduced.

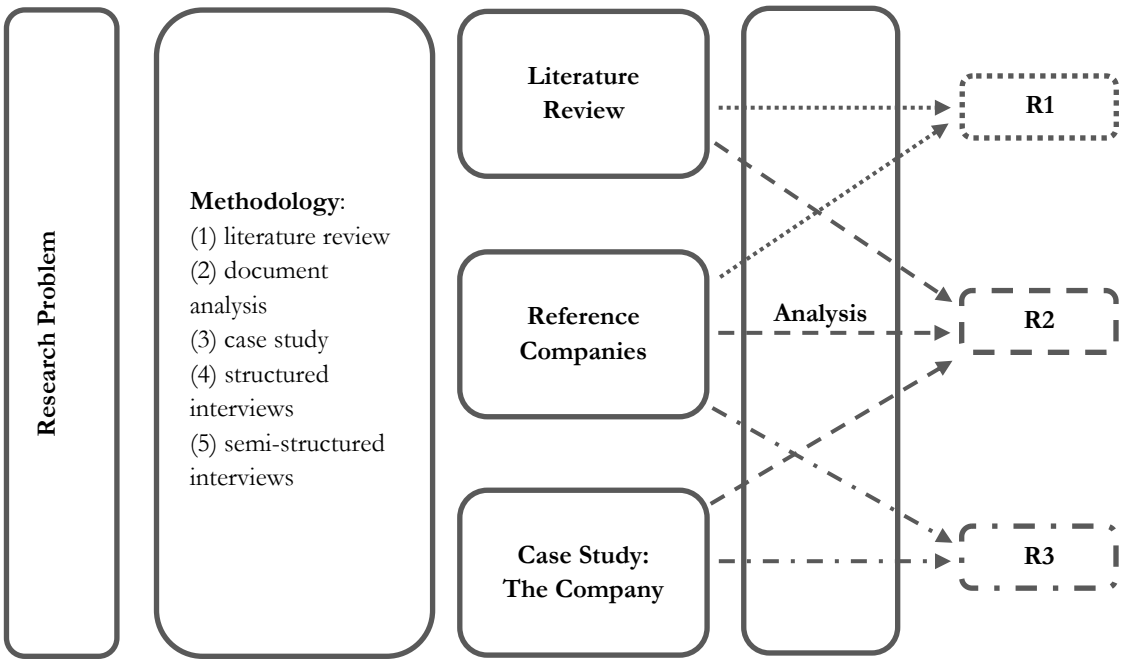

Figure 1-2 Research overview

The literature review is followed by a case study of a company which entails a comprehensive document review and interviews with crucial actors within the case company as well as representatives of a number of reference companies. The findings are analysed and discussed drawing on the previously chosen theoretical framework in combination with results from the reference cases. Figure 1-2 depicts the research process.

1.3.1 Research design

The research for this thesis is inductive, seeking to "use detailed readings of raw data to derive concepts, themes, or a model" (D. Thomas, 2006, p.238). Primary data is collected through interviews and a document review from a case study. In the context of this study the inductive approach is preferable to a deductive analysis as the research subject (drivers for and benefits of participation in voluntary environmental disclosure programmes, in particular the Carbon Disclosure Project) has not been widely researched. As opposed to the theory-/ hypothesis-testing of deductive methodologies an inductive tactic facilitates the exploratory nature of a case study (D. Thomas, 2006). This thesis aims to identify potential general characteristics of the relationship between companies from the cleantech business sector and participation in voluntary environmental disclosure programmes by drawing on findings from the case study as well as the reference companies.

R1 Why do companies engage in voluntary environmental disclosure? The first research question is focussed on main drivers for and benefits of companies which decide to participate in voluntary environmental reporting programmes, such as the CDP. Both traditional and cleantech companies are taken into account. The findings are drawn from a literature review as well as structured interviews with reference companies that are reporting to the CDP. Green Club Theory is used as a theoretical framework in order to assess if the CDP qualifies as a green club.

R2 Why should the case company participate in the Carbon Disclosure Project? The second research question is connected to the case study. In order to identify cost and benefits of a potential participation in the CDP the case company, its operational context, its product portfolio and environmental practices are closely examined. The data collection is based on semi-structured interviews with staff members at The Company, and a review of relevant internal and external documents. Information on the CDP is gathered through a combination of literature and document review as well as participation in a workshop for member companies organised by the CDP.

R3 How can the case company implement the Carbon Disclosure Project? The third research question refers to a gap analysis for the case company. Based on the status quo at The Company as presented within the context of the second research question a set of recommendations on how to deal with a first-time response to the Investor CDP is developed. Recommendations take into consideration the specific circumstances at The Company, present data and strategy gaps as well as common reporting practices at the reference companies as identified in previous interviews.

1.3.2 Case study approach

The second part of this thesis is an in-depth case study focussing on The Company and the CDP. A case study approach is appropriate when the research puts emphasis on the how and why of a problem (Yin, 2009). Its exploratory nature allows the researcher an "in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, program or system in a 'real life' context" (Simons, 2009, p. 21). In addition to setting the boundaries (e.g. spatial, temporal, organisational etc.), it is important to clearly define subject and object of the case study (G. Thomas, 2011). The

subject (or unit of analysis) of a case study refers to the phenomenon that is being studied while the object encompasses the theoretical framework that is used to analyse the findings. In this study, participation in voluntary environmental disclosure programmes by companies within the cleantech business sector comprises the phenomenon to be explored. It is of interest in so far as the subject has not been sufficiently researched yet as pointed out in Ch. 1.1. Given the lack of previous research and available data a case study offers the opportunity to gain a first in-depth impression of programme diffusion which could in later stages be used as a basis for comparative studies and statistical analyses.

The case company was chosen because management had expressed an interest in an assessment of what benefits the company could receive by participating in the CDP and recommendations pertaining to the potential implementation of this reporting scheme while offering support and access to internal documents. Moreover, the headquarters of The Company are located reasonably close to Lund, facilitating an on-site visit and face-to-face interviews. Given the clear boundaries of a single company, a case study approach allows for a reasonably detailed exploration of the research subject. In this case, that entails understanding the context in which The Company operates, its motivation for considering engaging in VED and potential benefits connected to participation in the CDP.

In the past case studies have often been criticised by academics as inferior to other empirical methods such as experiments. The main source of criticism concerns statistical generalisations. While it is true that case studies do not allow for statistical inferences to be made, generalisations are still possible. However, when conducting case studies the researcher seeks to generalise to theory instead of to other case studies (Yin, 2009). With regard to this thesis, this means that while findings based on The Company cannot be generalised to other companies they can still be used to examine how they fit with the theoretical framework of green clubs (Onwuegbuzie & Leech, 2010). Moreover, there are ways of ensuring the high quality of a case study in terms of validity (i.e. construct, internal, and external) as well as reliability. In the context of this study, only construct validity and reliability are of relevance. External validity is naturally low given the single-case nature of the case study in this thesis. Internal validity is irrelevant because the case study is exploratory and not concerned with establishing causal relationships (Yin, 2009). In terms of construct validity a strategy of data triangulation is used to ensure that appropriate operational measures are chosen to study the phenomenon. Furthermore, close contact to staff at the case company make double-checking of information and follow-ups possible. Finally, reliability is achieved by carefully documenting the whole research process in order to allow for replication of the case study. Nevertheless, a small risk of bias, for example among interview partners or in choosing which data to include in the research, is acknowledged.

1.3.3 Data collection and analysis

Given the inductive nature and case study approach chosen for this study, minimising the risk of bias and one-sidedness is crucial. Therefore, this thesis uses an information triangulation strategy of combining information and data from different sources. This ensures the quality of the research and provides differentiated perspectives on the issues addressed in the research question and objectives. Data is collected by using several qualitative methods and sources of information: a detailed literature review on relevant issues was carried out, important documents provided by the CDP and the case company were reviewed, a workshop on reporting organised by the CDP was attended, and interviews with representatives from companies disclosing to CDP as well as with representatives of the case company were conducted.

Primary data

Primary data was gathered through structured interviews with representatives of the reference companies, and semi-structured interviews with responsible managers at The Company. For a detailed reasoning on how and why interview partners were chosen refer to Ch. 1.3.4.

Secondary data

In addition to primary data from interviews and document analyses, further information was gathered by reviewing the existing body of literature on relevant topics, covering scientific books, journal articles and reports from companies, organisations and public authorities. The Lund University library search engine LUBsearch was used in combination with EBSCOhost and SciVerse Hub databases and public online search engines such as Google Scholar. In a first step, relevant key words (such as "voluntary environmental disclosure", "voluntary environmental program/me", "voluntary reporting", "carbon disclosure", "green clubs", "Carbon Disclosure Project", "CDP") were searched using advanced searches in the above mentioned sources. Then, further sources were identified by "snowballing" from references in the material already gathered. The literature review was guided by two objectives: (1) to provide an overview of the current state of research in the field of voluntary environmental disclosure in general and the CDP in particular, and (2) to gain an understanding of Green Club Theory as the theoretical framework for analysis of this thesis.

In addition, a number of documents (both in print and electronic format) provided by The Company and the CDP were reviewed. Sources from The Company included, inter alia, sustainability and annual reports, code of conduct, and the internal sustainability questionnaire. They were either publicly available on the Internet or provided by the company. The review focussed on key themes such as The Company's environmental management practices and policy, the product portfolio, the relationship between products and CO_2 emissions, and collection of environmental data (in particular emissions to air). Documents from the CDP comprised among others various programme reports (e.g. Nordic 260 Climate Change Report), the scoring methodology, guidelines for respondents, and presentation slides from a CDP workshop. The documents were downloaded from the CDP web page or distributed during and after the workshop. They were examined mainly in order to obtain an understanding of the CDP, its design, functioning and reporting scheme. Furthermore, testimonials by companies participating in the CDP as published on the official CDP web page were reviewed to study the type of costs and benefit these case companies attribute to their participation.

Analysis

The overarching theoretical framework for analysing the data and findings gathered during the research period is Green Club Theory. Green Club Theory is based on Buchanan's club theory and seeks to explain how membership in green clubs induces companies to take actions that go beyond compliance with environmental regulations (Potoski & Prakash, 2005; Prakash & Potoski, 2006, 2012). A more detailed description of the theoretical framework will be provided in Ch. 2.

In terms of structuring the types of benefits ascribed to the CDP by various actors (i.e. academic literature, reference companies, CDP) no strict framework is used. However, reoccurring themes and patterns are categorized into four broad groups pertaining to financial, legal, competitive, and strategic aspects (Brammer & Pavelin, 2006).

1.3.4 Interview design

Interviews were conducted with two groups relevant to the topic of this thesis. First, representatives from eleven companies that are currently responding to the CDP were interviewed. Potential companies were identified based on the *CDP Nordic 260 Climate Change Report 2012* (CDP, 2013i) which lists a total of 148 companies which responded to the CDP request in 2012. The scope of eligible companies was narrowed down to Danish and Swedish businesses due to their geographic proximity and because the case company is located in Sweden. In a second step, only companies that disclosed their information publicly were sampled based on the assumption that those would be more willing to share information and to participate in this research. This yielded a list of 55 companies: 15 from Denmark and 40 from Sweden. For the full list of eligible companies refer to Appendix 1.

Seeing as this thesis is interested in if and how cleantech companies benefit from voluntary environmental disclosure, the goal was to include companies from both the cleantech business sector and other industries in order to examine potential differences. Clean technology was defined broadly as any product and/ or service that contributes in some way to the reduction of greenhouse gas emissions. Only companies that primarily offer clean technology solutions were considered[3]. However, a close examination of the list of companies revealed that only one out of the total of 148 companies fit these criteria. Based on the information provided in the *CDP Nordic 260 Climate Change Report 2012* the companies were grouped according to (a) sector, (b) disclosure score, and (c) performance score. Then ten companies were chosen. The selection process was guided by striving for a mix of sectors and representing the full spectrum of disclosure and performance scores (ranging from top performers to laggards). While originally also aiming for a balance between the two types of companies the lack of cleantech companies, that answered the 2012 Carbon Disclosure Request for Information, skewed the ratio. Out of the ten initially contacted companies, five agreed to be interviewed while the remaining five either declined or failed to respond to the interview request, among them the only cleantech company. Ten replacement companies were contacted, chosen carefully to maintain the aforementioned mix of companies. Six companies consented to being interviewed, resulting in a total of eleven interviews.

Table 1-1 Overview of interviews with reference companies reporting to the CDP

Company	Sector	Date of Interview
Boliden Group	Materials	14.03.2013
Coloplast	Health Care	12.04.2013
Company A	Financials	15.04.2013
Company B	Industrials	23.04.2013
Company C	Telecommunication	07.05.2013
Dampskibsselskabet NORDEN A/S	Industrials	26.03.2013
Novozymes	Materials	25.03.2013
Securitas	Industrials	17.04.2013
Skanska	Industrials	08.05.2013
Trelleborg	Industrials	15.03.2013
William Demant	Health Care	15.03.2013

[3] Companies that provide only a few environmentally friendly products or services as part of their overall portfolio do not qualify as cleantech businesses in the context of this thesis.

The interviews were short and consisted of a structured set of 17 questions aimed at exploring why companies chose to respond to the CDP, how they, in their opinion, benefit from disclosing their emissions and how they organise the reporting. They were conducted via phone and lasted on average for approximately 30 minutes. Due to unforeseen events one of the interviews could only be carried out partially and in written form. Table 1-1 gives an overview of all interviews performed. Three reference companies preferred to remain anonymous. The questionnaire can be found in Appendix 2.

For the second part of this thesis semi-structured interviews with the two managers responsible for environmental management at the Group-level at the case company were conducted. Both of them were interviewed multiple times in person as well as via phone and email. For a detailed list of all interviews please refer to Appendix 3. The interviews covered a range of topics, including general information on the company, the product portfolio, environmental management practices and policies, sustainability reporting, collection of emission data, and rationales for environmental activities.

1.4 Scope and limitations

This thesis seeks to close the research gap on the benefits of engaging in voluntary environmental disclosure schemes and in particular focussing on the CDP. Given the lack of previously conducted research on the topic, eleven reference companies are interviewed regarding their experience with and opinions on the Investor CDP. Both voluntary environmental disclosure and the CDP are described. An understanding of The Company, its operations and environmental management performance, with special emphasis on carbon emission related activities and products is developed. Initially, the study also aimed to examine if and how cleantech companies may be different from non-cleantech companies in their perception of the CDP. However, during early stages of the research it became apparent that only one out of the 148 companies in the *CDP Nordic 260 Climate Change Report 2012* qualified as cleantech. Unfortunately, despite several attempts to seek contact the company was unavailable for an interview. Therefore, comparisons between these two types of companies could not be drawn.

This study focuses only on the diffusion of voluntary environmental disclosure programmes, i.e. why do companies decide to join these schemes and what are the associated costs and benefits. It does not take into consideration issues such as the emergence of voluntary environmental disclosure or the efficacy of these schemes in improving environmental performance among participating companies. As discussed in Ch. 1.3.2 using a single case study has certain limitations with regard to generalising the findings to the whole population of cases. Furthermore, the issue of bias discussed in the aforementioned chapter could distort results but is counteracted by choosing an information triangulation strategy.

The intended audience for this thesis are (a) practioners (e.g. companies participating in the CDP or companies interested in responding to the CDP), (b) academics researching voluntary environmental disclosure programmes in general and the CDP in particular, and (c) the environmental management staff at The Company.

1.5 Disposition

This thesis is structured as follows.

Chapter 2 introduces Green Club Theory as the theoretical framework for analysis.

Chapter 3 is devoted to a literature review, focussed on voluntary environmental programmes in general and voluntary environmental disclosure in particular. An overview of the CDP as

an organisation and the Investor CDP as a specific example of voluntary environmental disclosure is given. Next, the benefits of engaging in voluntary environmental disclosure programmes as presented in the literature and by the CDP are discussed.

Chapter 4 presents and analyses the empirical findings from the interviews with the eleven reference companies on their experience with responding to the CDP, with special focus on their opinion on how participation in the CDP impacts their business activities. Then, all three sources discussing benefits of the CDP are compared.

Chapter 5 presents the case company, including its product portfolio and current corporate environmental management practices. It briefly delineates the reasons for The Company's interest in potentially disclosing their carbon emissions to the CDP in the future before providing the reader with a gap analysis comparing requirements of the CDP request with data available through the case company's internal sustainability questionnaire.

Chapter 6 contains the application of the theory framework to the CDP to determine if the programme qualifies as a green club. Furthermore, the findings of the gap analysis are discussed with regard to how feasible and beneficial answering the CDP request would be for The Company at this point.

Chapter 7 summarises and reflects upon the findings and offers recommendations pertaining to the implementation of the CDP at The Company. Suggestions for further research are offered.

2 Theoretical Framework: Green Clubs

This chapter introduces Green Club Theory as the theoretical framework for this thesis.

The theory of green clubs seeks to explain why companies join clubs that engage in environmental activities that go beyond legal requirements and unilateral actions (Darnall, Potoski, & Prakash, 2010). The theory is grounded in the notion of club goods. Until the 1950s economists distinguished between only two types of goods: private and public ones. The classification is based on the characteristics of excludability and rivalry. Goods are excludable when there is a mechanism that only grants access to the good to people who pay for it. Rivalrous goods, in contrast, can only be consumed by one individual or put differently, the consumption of a rival good by one person prevents others from consuming it. Private goods are rivalrous and excludable whereas public goods are non-rivalrous and non-excludable (Mankiw, 2008). However, there are two additional types of goods covering the other two combinations of rivalry and excludability. Common-pool resources, discussed for example in *The Tragedy of the Commons* by Hardin (1968), are non-excludable but rivalrous, such as air or fish stocks in international waters. This thesis focuses on the fourth type of good: so called impure public or club goods. Club goods are non-rivalrous like public goods but excludable like private goods. One commonly used example of a club good is a swimming pool: an entrance fee limits access to the pool to those who pay; however, for the customers that have paid use of the facilities is non-rivalrous.

It was only in the 1960s that economists began researching club goods and the first economic theory of clubs is credited to James Buchanan (1965) although Mancur Olson (1965) published an article on the issue at the same time. Building on the nature of club goods a club is characterised by the following properties: (1) voluntary membership, (2) exclusion mechanism, and (3) sharing of club good among club members (Cornes & Sandler, 1986). First, club membership is voluntary. Members join a club because they benefit in some form from their membership. Second, as mentioned before club goods are excludable. Therefore, clubs have exclusion mechanisms in place to limit access to the club goods they provide (otherwise these goods would be available for everyone, thus turning into public goods). Often exclusion is managed via fees and/ or certain club standards that must be complied with to gain membership status. For a club to be effective and successful it is important that the costs associated with membership, both in terms of direct, e.g. fees and dues, and indirect costs, e.g. investments made to meet club standards, are lower than the benefits gained from the club good. Third, club goods are non-rivalrous among club members. However, often the utility of club goods decreases with increasing numbers of users due to crowding effects. Hence, most clubs have an optimal size.

The theory of Green Clubs is an application of club theory to clubs with an environmental focus or goal. Green clubs aim to "induce participating firms to incur the private costs of undertaking progressive environmental action beyond what they would take unilaterally" (Prakash & Potoski, 2006, p. 36). Instead of traditional club goods such as a golf club they seek to provide positive environmental externalities, like the reduction of environmental impacts caused by business activities, while at the same time delivering positives that can be internalised by the club members. Green clubs are typically sponsored and managed by any of the following three actors: industry associations, government agencies or NGOs (Prakash & Potoski, 2012; van't Veld & Kotchen, 2011). In contrast to traditional economic clubs membership in most green clubs is free of charge; there are no membership fees. Instead membership is tied to the adoption of and adherence to the club's standards of conduct which result in sometimes considerable but always non-trivial indirect costs connected to achieving and maintaining these standards (Prakash & Potoski, 2007). Green clubs are usually targeted at companies which join them expecting certain benefits linked to the

membership. According to Prakash and Potoski (2007) and van't Veld and Kotchen (2011) there are three types of benefits linked to green clubs. First and foremost, green clubs increase social and environmental welfare (e.g. reduction of environmental impacts). Second, members receive club goods, which in the case of green clubs, usually relate to branding benefits. Participating companies may improve their reputation through affiliation with the positive image of the club and gain goodwill from external stakeholders. Actions of green clubs are usually perceived to be more credible by external audiences than unilateral activities by individual companies due to the greater level of institutionalisation of a club. Finally, club membership may result in private tangible and intangible benefits for the individual member, such as creation of new business opportunities or achieving price premiums for their green products.

Institutional design of green clubs

The institutional design of green clubs aims to prevent club failure and to ensure effective operations. The two major challenges are to attract a sufficient number of members and to prevent shirking (Prakash & Potoski, 2006, 2007). The failure to attract an adequate number of club members, also referred to as Olsonian dilemma, is problematic because the positive brand image of a green club increases in strength with the number of members. A higher number of participating companies enables the green club to reach a broader range of external stakeholder and audiences and thus to increase the visibility of the club's progressive environmental activities. Another issue pertains to shirkers among club members. Shirking occurs when participating companies adopt the club's standards without in fact adhering to them (Prakash & Potoski, 2007, 2012). Thus, they may benefit from the club's positive reputation and the "social license to operate" (Prakash & Potoski, 2006, p. 19) it bestows on all club members without being actually environmentally progressive themselves. This is made possible by the fact that many green clubs suffer from information asymmetries due to the high costs of monitoring their members as well as a lack of scrutiny from external stakeholders and the public (Prakash & Potoski, 2007). If shirking becomes a pervasive problem within a club it can result in negative repercussions, particularly regarding the club's image and legitimacy. Shirking can be prevented by establishing effective enforcement and monitoring tools.

Club standards and enforcement rules

Based on these two challenges the main features of green clubs are (1) club standards and (2) enforcement rules. The individual set-up is shaped by the club's purpose as well as the sponsor (Prakash & Potoski, 2007). Typically, clubs lay down specific performance- or process-oriented standards for their members or require prospective members to have established a certain high environmental standard prior to joining the club. These standards vary in the level of stringency, ranging from lenient to strict standards. Lenient standards, on the one hand, are easier and cheaper to achieve for members and thus an effective incentive to increase membership. However, the club's reputation and legitimacy are likely to be less positive due to the marginal environmental requirements for club members. In the long term this can lead to so-called adverse selection: the low-hanging fruits of green clubs with low standards attract primarily environmental laggards causing environmental top-runners which are crucial for a club's positive standing to avoid them. This type of green clubs is often criticised for being a mere greenwash (Prakash & Potoski, 2006). Stringent standards, on the other hand, produce more positive environmental impacts and hence create a stronger, more credible brand image. At the same time, they are sometimes less attractive to prospective members due to the substantial costs of adopting and maintaining the club standards.

With regard to enforcement rules there are three main elements: (1) regular audits, (2) public disclosure of information, and (3) sanctioning mechanisms (Prakash & Potoski, 2007).

Audits can be administered by first, second or third parties. First party audits refer to self-certification which sometimes is considered to lack credibility. Second party audits are carried out by a company operating in the same sector or by a different business unit within the company which increases the level of credibility. Preferable are, however, third party audits by external, certified assessor (Prakash & Potoski, 2006, 2007). In addition, making the public disclosure of audit information and results mandatory increases the level of transparency and reduces information asymmetries. Finally, the effectiveness of enforcing club standards also depends on appropriate sanctioning mechanisms. If non-compliance cannot be penalised preventing club members from shirking becomes difficult. Sanctioning mechanisms range from soft measures such as name shaming transgressions to hard measure like revoking the membership of shirkers (Prakash & Potoski, 2006). Against this background, it is crucial for sponsors to find a balance between an appropriate level of enforcement to curb shirking and excessive measures that discourage prospective members from joining the club.

3 Literature Review

This chapter presents the findings of the literature review. First voluntary environmental programmes including voluntary environmental disclosure are described. The second part introduced the Carbon Disclosure Project. Finally, the benefits of engaging in voluntary environmental disclosure programmes and schemes as presented in academic literature and communicated by the CDP are discussed.

3.1 Voluntary environmental programmes

Voluntary environmental programmes (VEP) are a form of self-regulation through "programs, codes, agreements, and commitments that encourage private businesses to voluntarily reduce their environmental impacts *beyond* the requirements established by the environmental regulatory system" (Darnall et al., 2010, p. 284). Typically, a VEP is made up of a set of requirements that member have to fulfil which may be backed up by monitoring and enforcement tools (Prakash & Potoski, 2006). In return for taking progressive actions participating companies benefit from being associated with the positive reputation of the VEP. In addition, VEPs decrease search and information costs for external audiences, such as customers, investors or civil society, interested in the environmental actions of the company by providing them with a basis for evaluation. In the absence of VEPs assessing a firm's environmental performance is difficult for external stakeholders due to information asymmetries (Prakash & Potoski, 2012). Until the 1980s environmental issues had been primarily dealt with through regulation (Prakash & Potoski, 2006). However, this command and control approach was not always successful, mostly due to imperfect regulations and a lack of enforcement and monitoring capacities at the governance level. A little later, market-based instruments, such as emission trading schemes, followed (Kim & Lyon, 2011). Still, it was felt that these tools were not sufficient to effectively tackle environmental problems. Therefore, VEPs, sometimes also referred to as voluntary agreements, were created to compensate for their shortcomings. It is important to note though, that VEPs were introduced as supplements to and not substitutes for regulation and market-based instruments.

VEPs exist in various shapes and forms depending mainly on their (a) sponsorship, (b) purpose, and (c) the stringency of requirements (Prakash & Potoski, 2012). Whereas regulations and market-based instruments can only be created by institutions with official decision-making powers, VEPs can be sponsored by a range of actors including government agencies but also industry associations and non-governmental organisations (NGOs) (Matisoff, 2012). An example of a government-initiated VEP is the United States Environmental Protection Agency's *33/50 Programme* which was aimed at reducing emissions and transfers of 17 chemicals. One of the most well-known industry-driven VEPs is the *Responsible Care* programme of the chemical industry focused on improving health, safety and environmental performance. Finally, examples of VEPs sponsored by NGOs include the *Forest Stewardship Council* (FSC) certifications for wood products, the *Roundtable on Sustainable Palm Oil* (RSPO), certifications by the *International Standard Organization* (ISO) and the CDP, the subject of this thesis.

As the aforementioned examples show, VEPs are created for various purposes. While most of them aim to improve their members' environmental performance, some offer additional certification of products (e.g. FSC or RSPO) or gather and publish data that can be used for example for benchmarking by their members (e.g. CDP). Government-run VEPs sometimes provide further benefits to their members that the other two types of VEP sponsor are not able to offer: given their position and authority government VEPs may reduce regulatory requirements for participating companies, for example with regard to audits and reporting (Coglianese & Nash, 2008). Finally, VEPs can be distinguished based on the stringency of the requirements that have to be met by participating companies. They can vary from lenient

over medium to stringent obligations. A more detailed discussion of the subject has been provided in Ch. 2.

Voluntary environmental disclosure

Voluntary disclosure is a concept originally used in accounting for companies that go beyond legislative requirements in terms of the financial data they publish in their Annual Report. More recently, the concept has been extended to voluntary environmental disclosure, i.e. provision of additional environmental data (including both financial and non-financial) for example in sustainability or annual reports (de Villiers & van Staden, 2011). Thus, voluntary disclosure falls under the category of VEPs. According to academic literature this type of disclosure is usually aimed at either investors or a broader group of internal and external stakeholders including employees, customers, and civil society (de Villiers & van Staden, 2011). The drivers for VEP differ depending on the target group. With regard to investors major incentives for companies to engage in voluntary environmental disclosure are to decrease information asymmetries and the cost of stock evaluation for financial stakeholders (Brammer & Pavelin, 2006; Francis, Nanda, & Olsson, 2008). Providing environmental information for other stakeholders is mainly done to legitimise the company's action, provide accountability and create transparency (de Villiers & van Staden, 2011; Solomon & Lewis, 2002). VED is "viewed as a constructed image or symbolic impression of itself that a firm is conveying to the outside world to control its political or economic position" (Cormier, Magnan, &Van Velthoven, 2005, p. 7). Furthermore, in most societies the growing interest in environmental issues translates into greater political attention which in turn often increases the pressure on companies to disclose environmental information. Against this background firms sometimes see VED as means to pre-empt more stringent environmental regulations (Solomon & Lewis, 2002).

Disclosure, however, is not only associated with benefits for the companies but also with certain costs. First, there are costs connected to the disclosing process itself (e.g. gathering, verifying and publishing data). Second, disclosing information can have negative repercussion if external actors, such as competitors, are able to use it in a damaging way (Cormier et al., 2005). Third, some scholars argue that committing to voluntary environmental disclosure schemes may restrict a firm's strategic discretion (Brammer & Pavelin, 2006). Armstrong (2011) groups the drivers for VED, in particular with regard to greenhouse gas emissions schemes, into two categories. On the one hand, companies react to outside pressures, namely from investors and from customers that are interested in their supply chain. On the other hand, companies use VED as a proactive tool to get ahead of the legislative curve and to improve their business strategy and obtain competitive advantages. In addition to drivers some scholars (cf. Okereke, 2007) identify certain barriers that let companies remain cautious when considering VED. The most commonly cited refer to the lack of a strong policy framework and regulatory and market uncertainties. Without clear signals from the policy arena in favour of VED corporations claim to find it difficult to justify the additional costs of progressive environmental activities and reporting (Okereke, 2007). As mentioned above many companies engage in VED as part of their annual sustainability reports. However, there are also specific VEPs dedicated to environmental disclosure, such as the CDP.

3.2 The Carbon Disclosure Project

The CDP, initiated in 2000 in the United Kingdom, is an independent global non-profit organisation that gathers information on greenhouse gas emissions and water use of companies and cities on behalf of investor. Starting out with 35 shareholders with US $4.5 trillion in assets today 668 investors worth US $78 trillion in assets are signatories to the CDP (CDP, 2012d). Members are mostly financial institutions, investment trusts, pension

funds and insurance companies. Prominent examples of signatory investors include HSBC Holdings, the Allianz Group, SEB and Morgan Stanley. Figure 3-1 provides a breakdown of the different types of investors. After three years of preparation the first round of data collection commenced in 2003; since then the number of participating companies as well as of investors has increased constantly. The CDP is mainly known for its climate change programme that collects data on greenhouse gas emissions, energy consumption and climate change strategies from companies. However, the CDP's portfolio also includes a data scheme focused on water scarcity as well as a supply chain programme which allows buyers to request carbon and water-related data from their suppliers (CDP, 2013r). The most recent project is the creation of a forests footprint to address deforestation risks, initiated in 2013 in cooperation with the Global Canopy Programme (CDP, 2013n). The CDP is funded through various sources, including membership fees paid by the signatory investors, corporate sponsorship, national governments, and foundations (CDP, 2013f; Andrew & Cortese, 2011).

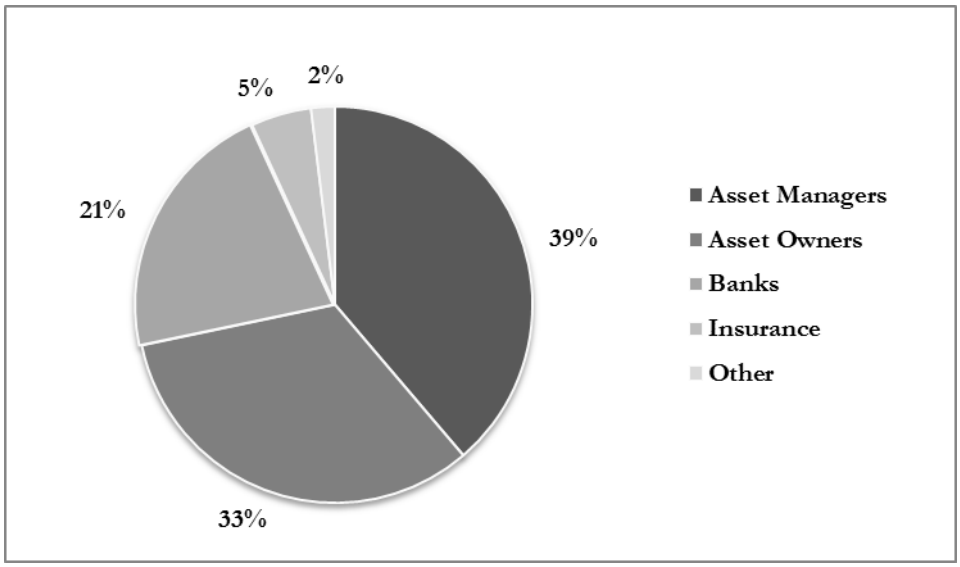

Figure 3-1 CDP member investors according to type as of 2012

Source: CDP (2012d)

Data gathered and published by the CDP is primarily used by signatory investors and in the case of the supply chain programme by requesting buyers. Investors both from the buy and sell side provide various services based on CDP responses. Buyers, for example, offer sector and portfolio analyses, and evaluations of the carbon sensitivity of investments whereas sellers use the data for broker recommendations, for peer and sector analyses, and to create novel green financial products (CDP, 2013h). Furthermore, index providers take CDP data into consideration when creating sustainability or climate change indices. If companies agree to their responses being made publicly available academics, policy-makers, and other external actors may use them, for example to increase knowledge on VED or to inform relevant policy-making processes. Participating companies often use CDP data for benchmarking within their sector as well as for sharing best practices (CDP, 2013h).

3.2.1 The Investor CDP

This thesis focuses solely on the *Climate Change Programme for Companies*, the Investor CDP. Its goals, as stated on the official CDP web page, are to collect relevant data from companies, to make this data publicly available in order to allow investors to make informed decisions and to encourage the incorporation of climate change related risks and opportunities in business practices (CDP, 2013q). Data is compiled based on an annual information request sent out

to companies worldwide pertaining to greenhouse gas emissions, emission targets, reduction strategies and perceived corporate climate change risks. Participating companies are grouped into ten sectors: consumer discretionary, consumer staples, energy, financials, health care, industrials, information technology, materials, telecommunication services, and utilities. In 2012, over 3,000 companies including 81% of the 500 largest companies worldwide (Global 500) participated (CDP, 2012d).

The questionnaire covers four themes – introduction, management, risks and opportunities, and emissions – with questions in 15 categories: general introduction, governance, strategy, targets and initiatives, communications, climate change risks, climate change opportunities, emissions methodology, emissions data, scope 1 emissions breakdown, scope 2 emissions breakdown, energy, emissions performance, emissions trading, and scope 3 emissions[4] (CDP, 2012e). The questionnaire is revised and if necessary modified on an annual basis. With regard to methodologies for collecting emission data the CDP does not dictate the use of any specific method. They recommend participants to follow the Greenhouse Gas Protocol (GHG Protocol) or national standards and require companies to disclose the standard, protocol or methodology that was used to gather data (CDP, 2012e). However, the quality of the methodology used to calculate emissions is not assessed. Furthermore, due to the voluntary nature of the reporting scheme invited companies may choose to not participate or to disclose only certain information which may affect the overall quality of the data (Andrew & Cortese, 2011). The information request is sent out in early February with a deadline for submission in late May. Participating companies enter their data in an online data base that can be accessed via the CDP web page. Afterwards the CDP publishes the data and compiles a number of annual reports which summarise aggregated responses for geographical regions and countries (e.g. Europe, Latin America, France, Denmark), the ten industry sectors as well as stock market indices and rankings (e.g. S&P 500, Global 500) (CDP, 2013b). Ensuring and increasing transparency is one of the major goals of the CDP. Therefore, they encourage companies to publicly disclose their responses. However, each firm can decide to restrict access to the information they report to the member investors of the CDP (Armstrong, 2011). Overall, the majority of companies disclose publicly.

Once the CDP has received all responses they are evaluated in terms of disclosure and performance. To ensure transparency the scoring methodology used by the CDP is publicly available online as well as through webinars providing an introduction to the scoring (CDP, 2013j). The disclosure score is based on the comprehensiveness of a company's disclosed data representing its level of commitments, not the quality of the corporate carbon management (CDP, 2012a). It is measured on a 100-point scale. Similarly, the performance score reflects actions participating companies take to improve their carbon management with regard to climate change mitigation, adaptation and transparency (CDP, 2012b). Only companies with a disclosure score of 50 and above are awarded a performance score in the form of a letter grade between E (worst) and A (best). The highest scoring companies in both categories become part of the Investor CDPs two leadership indices: the Carbon Disclosure Leadership Index (CDLI) and the Carbon Performance Leadership Index (CPLI) which are generated for all aggregates for which the CDP publishes annual reports (e.g. Global 500, Nordic 260) (CDP, 2012f). The entry criteria for the CDLI and CPLI are reassessed and adjusted every year to ensure high quality and continuous improvement (CDP, 2012d). For the CDLI for each of the samples of companies (e.g. Global 500, Nordic 2060) a certain threshold value is defined, usually the top ten per cent of the highest scoring

[4] The GHG Protocol distinguishes between three scopes of emissions: scope 1 includes all direct emissions of greenhouse gases, scope 2 refers to indirect electricity-related greenhouse gas emissions, and scope 3 covers all other indirect greenhouse gas emissions, for example from transportation by sub-contractors or raw material extraction by suppliers (GHG, 2004).

companies (CDP, 2012c). For the Global 500 CDLI 2012, for example, this translated into disclosure scores of 94 and above (CDP, 2012d). To enter the latest CPLI, participants had to have performance scores of 85 and above (irrespective of the sample group), achieve maximum scores in terms of absolute emissions performance, disclose and verify their scope 1 and 2 emissions and make their data publicly available on the CDP web page (CDP, 2012c).

3.2.2 The latest CDP Global 500 Climate Change Report

To illustrate the type of information and analysis that the CDP typically publishes in its reports this section takes a closer look at the latest *CDP Global 500 Climate Change Report* (2012d). Major themes of the CDP's annual reports include the adoption of emission reduction targets, the integration of climate change into corporate governance, the identification of climate change related risks, and opportunities and methods used to drive investments in emissions reduction activities. For the 405 corporations from the Global 500 that participated in 2012, the CDP finds that around 30% have absolute targets, another 30% adopted intensity targets, while 18% implemented both absolute and intensity targets. Interestingly, the remaining 22% of the companies operate without any emission reduction targets. A number of reasons seem possible, for example some of the companies are first- or second-time respondents and may still be in the process of setting up emission reduction targets. Despite the fact that almost four fifths of respondents adopted targets, the CDP finds that most of them lack ambition calling on average for a mere annual reduction of 1%. Moreover, the majority of companies only set short-term goals, ignoring the importance of long-term strategies.

Companies rely on three measures for integrating climate change issues into corporate governance: (1) obtain board or senior executive support and supervision (present in 96% of the cases), (2) embed climate change in their business strategy (implemented by 78% of respondents), and (3) introduce monetary incentives for climate change-related objectives (available at 64% of the companies). The CDP asks respondents to evaluate risks and opportunities linked to climate change. The main three types of drivers appear to be of physical and regulatory nature as well as stakeholder pressure. The majority of companies (83%) perceives regulatory risks to be the highest mainly due to uncertainty about future policy developments, followed by risks due to physical changes such as extreme weather and natural disasters with 81%. 63% report risks related to customer and stakeholder demands. The picture for opportunities looks slightly different: while most companies report opportunities connected to regulations and policy (80%), physical changes are only seen as potential ground for improving performance by 64%. The importance of stakeholder pressure is valued as an opportunity by 68%.

A last interesting finding from the *CDP Global 500 Climate Change Report* pertains to the methods participants employ to drive investments in emission reducing measures. Not surprisingly the most popular approaches, chosen by about half of the companies, are to set aside budgets for increasing energy efficiency, and to ensure compliance with relevant legal requirements. 44% invest in employee engagement and around one third has introduced internal incentives schemes. Other methods include financial optimisation of calculations and creating budgets dedicated to emission reduction activities or research and development for low carbon products. For most key statistics the CDP furthermore tracks changes over time by including and comparing them to the results from at least the previous year.

3.3 Benefits of voluntary environmental disclosure

As mentioned above VEPs are interesting for companies because they offer certain benefits in exchange for engaging in progressive environmental activities. When deciding on if to

participate in a specific scheme companies will therefore carefully weigh the costs and benefits. In times of economic hardship like the current economic crisis, justifying additional expenditures for VED often becomes even harder. This section summarises academic literature on the benefits of VED in general and the CDP in particular. However, as mentioned in the introductory chapter, literature and case studies on the CDP are scarce. A second part delineates the CDP view point based on their web presence, various publicly available documents, and information obtained during the CDP workshop.

3.3.1 Benefits according to academic literature

Academic literature finds many benefits attributed to business participation in voluntary environmental disclosure programmes. Some of them have already been introduced above but shall be repeated briefly. One of the most obvious benefits arises from corporations being associated with the positive and credible brand image of the VED scheme they participate in (Prakash & Potoski, 2007, 2012). This may affect companies in several ways: it my strengthen their own reputation, and lessen pressure from external stakeholders. Similarly, some scholars argue that VED confers social legitimacy to corporations by increasing their accountability and, especially in the case of the CDP, transparency (de Villiers & van Staden, 2011; Solomon & Lewis, 2002). Moreover, being part of a VED can positively affect a corporation's relationship with its local and national authorities. Government-run VED programmes may relax regulatory burdens (e.g. regular reporting, audits) for member companies (Coglianese & Nash, 2008). On a broader level and irrespective of sponsorship VED schemes are seen as means to prevent the introduction of more stringent environmental regulations by signalling to policy-makers that it can achieve the same results (Solomon & Lewis, 2002). At the same time, membership in a VED programme may increase a company's power to lobby policy-making processes (Okereke, 2007).

From an economic point of view engaging in VED is mostly seen as a tool to improve investor relations. As discussed previously, VED programmes decrease information asymmetries and simplify the task of evaluating shares for prospective investors (Brammer & Pavelin, 2006; Francies et al., 2008). This is the main rationale behind the creation of the CDP which was founded to cater to investors interested in the environmental performance of prospective companies for their portfolio. In this context, it is interesting to note that there is no clear consensus among academics on the question if VED does in fact improve environmental performance. While some scholars find a positive correlation (cf. Clarkson, Li, Richardson, & Vasvari, 2008; Dawkins & Fraas, 2011) others hold that it does not lead to any significant changes (cf. Cong & Freedman, 2011; Kim & Lyon, 2011; Matisoff, 2012). A strong brand image in connection with good investor relations and potentially improving environmental performance may enable companies to strengthen their position on the market compared to their competitors (Prakash & Potoski, 2006). Similarly, according to the literature VEPs should allow companies to receive price premiums for their products and services based on the willingness of environmentally conscious customers to pay more (Prakash & Potoski, 2006; van't Veld & Kotchen, 2011).

Having access to responses from competitors allows participating companies to benchmark their performance in a specific sector or region. A study conducted by Pricewaterhouse Coopers (PwC) and the CDP on behalf of the UK Department for Environment, Food and Rural Affairs on the costs and benefits of greenhouse gas emission reporting (2010) finds that the majority of surveyed and interviewed companies in the UK perceive mainly intangible benefits, such as identification of carbon-related business opportunities and emission reductions potentials. Quantification of benefits derived from greenhouse gas reporting, such as the CDP, appears to be not practiced at most corporations. Furthermore, there are some studies that discovered that participating in VEPs (among other

environmental corporate social responsibility activities) increases motivation among employees and renders the company more attractive to certain types of employees (namely the ones that have high levels of moral motivations) (Brekk & Nyborg, 2008). Given the multitude of benefits for companies engaging in VED some scholars suggest to group them into broader categories. Brammer and Pavelin (2006) distinguish between financial, legal, competitive and strategic benefits. Table 3-1 gives an overview of the benefits described in this section based on their classification.

Table 3-1 Benefits of engaging in voluntary environmental disclosure according to academic literature

Category	Benefits
Financial	Lower information costs for green investors
	Increased profits due to savings and willingness of green customers to pay environmental premium
	Short- and long-term savings (e.g. through decreased greenhouse gas emissions and thus lower energy costs)
Legal	Gain leverage in policy-making processes
	Gain influence on regulatory processes
	Get ahead of regulatory curve
Competitive	Improved market position
	Strengthen brand image and reputation
	Improved environmental performance in terms of greenhouse gas emissions
	Benchmarking
Strategic	Identify and realise new business opportunities
	Legitimatise environmental management by making emission data publicly available and the company accountable
	Improved rapport with external stakeholders
	Improved relationship with employees

It is interesting to note, that the reviewed literature mostly focuses on financial and competitive advantages while legal and strategic aspects are given less attention. There is extensive research on the relationship between both VED in general and the CDP in particular and green investments and the impact of VED on environmental performance.

3.3.2 Benefits according to the CDP

The CDP sums up the main benefits for companies participating in the Investor CDP in the following two themes: (1) stakeholder engagement, and (2) management through measurement (CDP, 2013h). Responding to the CDP, in particular when responses are made publicly, increases transparency of business practices and allows companies to interact with various internal and external stakeholders. Investors, who are the main drivers behind the CDP, use the data for evaluating shares as has been described in Ch. 3.2. In addition, CDP responses may act as a basis for a dialogue with pressure groups, such as environmental NGOs or local authorities. Finally, providing CDP responses to customers in both business to business (B2B) and business to customer (B2C) settings can be beneficial. Companies with close end-customer relations are, depending on the nature of the product or service they provide, under close scrutiny with regard to their environmental performance. Similarly, managing your supply chain has become a more and more important part of corporate responsibility (CDP, 2013h). In terms of management through measurement the CDP stresses that mapping and measuring current corporate activities (e.g. introduction of an extensive greenhouse gas emission monitoring scheme, calculating a baseline, and/ or adopting emission reduction targets) is a valuable part of improving knowledge on and understanding

of the business. This in turn enables participating firms to identify and consequently rectify inefficiencies, resulting in reduced greenhouse gas emissions as well as short- and long-term savings, for example regarding energy costs. Moreover, the CDP encourages respondents to appraise potential climate change induced threats to their business operations and to introduce steps to mitigate risks and to increase their resilience. At the same time it may make climate change-related opportunities more visible, such as the development of new products and services (CDP, 2013q). All of these activities might allow a company to achieve a competitive advantage in their market sector. In addition to using their own responses, company may also draw on CDP data of their competitors for benchmarking purposes.

To complement the general list of benefits the CDP provides a number of case studies of companies participating in the Investor CDP on their official web page which offer more specific information on how they perceive the benefits of being part of the CDP (CDP, 2013e). ADAS, a UK-based environmental consultancy, describes positive effects on employee awareness and engagement, for example with regard to business travel behaviour, switching to tele- and videoconferencing whenever feasible and using alternative, less fuel-intensive modes of transportation (CDP, 2013a). Dell, a computer technology company, focuses on the impacts reporting to the CDP has on their business strategy by assessing and incorporation risks and opportunities (CDP, 2013l). Similarly, EMC, which offers information management services and products, uses data gathered for the CDP for scenario planning as part of their strategic management. Furthermore, EMC's representatives mention how disclosing to the CDP improves their overall reporting skills with positive impacts on their reporting under official environmental regulations (CDP, 2013m). Avaya, a producer of communication systems, reports savings due to an improved carbon management system, for example by merging data centres to increase their energy efficiency and by reducing packaging, and the creation of new business opportunities through the development of more energy-efficient products (CDP, 2013c). Some of the case companies, such as Turner Construction Company, describe how the CDP positively influences their overall corporate environmental governance, for example by providing solid data on which to base its carbon management (CDP, 2013t). At News Corporation, a global media company, gathering standardised data for the CDP facilitates internal cross-business unit communication and information sharing processes (CDP, 2013o). Novo Nordisk, global healthcare provider, and Xcel Energy, a producer of electricity and natural gas in the U.S., stress the intangible benefits of increasing trust in their brand and their overall reputation through affiliation with the CDP as well as using disclosure and performance scores for external communication (CDP, 2013p, 2013v). Finally, the case of Vestas Wind Systems (Vestas), a Danish manufacturer of wind turbines, is of particular interest with regard to this thesis: similar to The Company, Vestas is active in the business of clean energy solutions, providing products that help customers to substitute fossil fuels for renewable energy and to reduce their greenhouse gas emissions. Vestas, which has been partaking in the inquiries for the last three years, states that being a member of the CDP has had two distinct positive effects. First, it has allowed Vestas to prepare a comprehensive breakdown of their greenhouse gas emissions and to identify opportunities for improvement. Second, by disclosing its environmental performance Vestas is fulfilling customer and investor demands, thus strengthening their market position (CDP, 2013u). Table 3-2 contrasts the benefits from academic literature with the ones listed by the CDP.

The CDP in its documents and case studies emphasises the financial and strategic benefits of participating in the CDP and to a lesser extent competitive advantages. Legal aspects, such as getting ahead of the regulatory curve or gaining influence in policy-making processes are not advertised in the documents and materials reviewed. The only exception is EMC, one of the case study companies, which describes how reporting to the CDP helped them to perform better in mandatory environmental reporting programmes (CDP, 2013l).

Table 3-2 Comparison of benefits of engaging in voluntary environmental disclosure according to academic literature and the CDP

Category	Benefits academic literature	Benefits CDP
Financial	Lower information costs for green investors	Lower information costs for green investors
	Short- and long-term savings (e.g. through decreased greenhouse gas emissions and thus lower energy costs)	Short- and long-term savings (e.g. through decreased greenhouse gas emissions and thus lower energy costs)
	Increased profits due to savings and willingness of green customers to pay environmental premium	
Legal	Gain leverage in policy-making processes	Improve performance for mandatory reporting
	Gain influence on regulatory processes	
	Get ahead of regulatory curve	
Competitive	Improved market position and competitive advantage	Improved market position and competitive advantage
	Increase trust and strengthen brand image and reputation	Increase trust and strengthen brand image and reputation
	Improved environmental performance in terms of greenhouse gas	Improved environmental performance in terms of greenhouse gas
	Benchmarking	Benchmarking
Strategic	Identify and realise new business opportunities	Identify new business opportunities
	Legitimatise environmental management by making emission data publicly available and the company accountable	Identify risks and risk mitigation strategies to increase resilience
	Improved rapport with external stakeholders	Identify and rectify inefficiencies
	Improved relationship with employees	Improve stakeholder engagement
		Employee awareness and engagement
		Improve internal communication and information sharing
		Improve corporate environmental governance

4 Reference Companies and the CDP: Findings and Analysis

Chapter 4 presents and analyses the empirical findings from the interviews with the eleven reference companies.

4.1 Findings: companies' experiences with the CDP

Eleven Swedish and Danish companies responding to the CDP were interviewed about their experience with the disclosure scheme (cp. Table 4-1). As delineated in Ch. 1.3.4 reference companies were chosen to represent a range of sectors and performance and disclosure scores. All of them were asked the same set of 17 questions (cp. Appendix 2) with the exception of Company C which due to unforeseen events was only able to answer part of the questionnaire in written form. The first part of the interview was intended to get a brief overview of the companies' environmental management structures while the second and bigger part focused on their experience with and opinion of the CDP. For different reasons three reference companies preferred to remain anonymous.

Table 4-1 Overview of interviews with reference companies

Company	Sector	Disclosure Score 2012	Performance Score 2012	First Response to CDP	Date of Interview
Boliden Group	Materials	85	B	2007	14.03.2013
Coloplast	Health Care	72	C	2007	12.04.2013
Company A	Financials	-[5]	-	2007	15.04.2013
Company B	Industrials	-	-	2007	23.04.2013
Company C	Telecommu-nication	-	-	2004	07.05.2013
Dampskibssels kabet NORDEN A/S	Industrials	90	B	2008	26.03.2013
Novozymes	Materials	94	B	2007	25.03.2013
Securitas	Industrials	77	D	2011	17.04.2013
Skanska	Industrials	82	C	2008	08.05.2013
Trelleborg	Industrials	74	C	2006	15.03.2013
William Demant	Health Care	55	E	2009	15.03.2013

Source: Data from CDP (2013i) and interviews

4.1.1 Reference companies in brief

As can be seen in Table 4-1 five of the companies are from the industrial, two each from the materials and health care, and one each is from the financial, and telecommunication sector. Despite their differences (e.g. in terms of size, profits, products and services) the companies are rather similar with regard to their environmental management. The vast majority follows the GRI for their sustainability reporting and several are members of the UN Global Compact. Most of the producing and some of the service companies have certified environmental management systems in place at their facilities (mainly ISO 14001) and Code of Conducts for their suppliers. In addition, many of them engage in sector-specific

[5] Performance and disclosure scores are publicy availabe but omitted to ensure anonymity of the companies.

programmes and schemes, such as The World Green Building Council or INTERTANKO's Environmental Committee. With the exception of one company all participants have been responding to the CDP for at least five years. Interview partners hold positions in the Corporate Responsibility, Environmental Management or Communications departments of their organisations and were all directly involved with the CDP reporting.

Producing companies

Six out of eleven companies classify as producing companies. Company B manufactures equipment for the construction and mining industry. The Boliden Group is a mining and smelting company. Coloplast and William Demant are both providers of medical devices and services. Novozymes is active in the biotechnology sector, producing mainly enzymes. Finally, Trelleborg offers advanced polymer technology and applications. While some of the companies are operating in a B2B context others produce for end-customers.

Service companies

Five of the interviewed companies provide services rather than producing goods. Company A is from the financial sector. Company C is a provider of telecommunication services. Dampskibsselskabet NORDEN A/S (NORDEN) is a shipping company operating both tankers and dry cargo carriers. Securitas is a provider of security services and solutions. Skanska is a project development and construction corporation. With the exception of Company C who services mostly private customers all companies work mainly with business customers. Service companies, like the five aforementioned ones, are interesting in the context of the CDP since the latter was developed mainly with manufacturing companies in mind. Therefore, in the past parts of the questionnaire did not apply to this type of companies or were – depending on the kind of services they provide – difficult to answer However, over the years the questionnaire was adapted to the special circumstances of service companies (Securitas, personal communication, April 17, 2013).

4.1.2 Drivers for responding to the CDP

The first research question asks about what drives companies to engage in voluntary environmental disclosure and to join the CDP. During the interviews participants were invited to identify drivers for responding to the CDP specific to their company. Their answers can be grouped into internal and external forces. For all companies, the decision to respond to the CDP was influenced by a mix of factors rather than one single driver.

External drivers

Most of the interviewees mentioned being invited to respond to the CDP by the CDP (cf. Company B, personal communication, April 23, 2013; NORDEN, personal communication, March 26, 2013; Novozymes, personal communication, March 25, 2013; Securitas, personal communication, April 17, 2013). However, in most cases receiving the CDP request was not considered to be sufficient reason to answer the questionnaire. The representative of Coloplast, for example, added that the company's largest shareholder approached them directly, requesting participation in the CDP (personal communication, April 12, 2013). Other companies mentioned general pressure from investors and other external stakeholders (cf. Company A, personal communication, April 15, 2013; Company C, personal communication, May 7, 2013; NORDEN, personal communication, March 26, 2013; Securitas, personal communication, April 17, 2013). Furthermore, the CDP is often seen as an instrument to engage in dialogue with stakeholders as the data gathered for the response can be used as grounds for discussions on various issues (cf. NORDEN, personal communication, March 26, 2013; Novozymes, personal communication, March 25, 2013).

Internal drivers

Many of the companies interviewed were positively influence by the idea that the CDP would decrease the time and resources they would have to spend on carbon disclosure: "From the beginning it seemed like a good idea to have one major source of carbon and climate data instead of having to answer ten or 20 different information requests" (Trelleborg, personal communication, March 8, 2013). The great size of the CDP furthermore enables participating companies to benchmark their performance against competitors (cf. Novozymes, personal communication, March 25, 2013). Increasing transparency at their respective organisations, is another key driver mentioned during the interviews (cf. Boliden Group, personal communication, March 14, 2013; NORDEN, personal communication, March 26, 2013) and to "add credibility to our environmental activities" (Novozymes, personal communication, March 25, 2013). As the representative of Company A puts it: "The CDP is a good platform for communicating our environmental performance" (personal communication, April 15, 2013). Against this background, Novozymes identified the high level of recognition that being associated with the CDP gained his company, as a driver (personal communication, March 25, 2013). Company C stated that they joined the CDP early on in 2004 because "it was our ambition to be at the forefront of the development in the field of voluntary carbon disclosure" (personal communication, May 7, 2013) and Skanska felt that "responding CDP fits in with our ambition to be the leading green construction company" (personal communication, May 8, 2013). From a strategic point of view, Novozymes and NORDEN emphasised that their decision to disclose to the CDP was informed by the fact that the CDP's goals align with their internal environmental strategies (NORDEN, personal communication, March 26, 2013; Novozymes, personal communication, March 25, 2013). Similarly, William Demant chose the CDP because it fits the ethical principles on which their business is built (personal communication, March 15, 2013). Finally, Securitas also saw the CDP as a tool for employee engagement and motivation (personal communication, April 17, 2013).

4.1.3 Disclosure process

Given the diverse sample of companies interviewed for this thesis it is not surprising that disclosure processes and procedures vary. The level of disclosure differs between companies as can be seen from their disclosure scores as well as the interviews. Four companies were awarded the letter grade D for their disclosure, three each got Bs or Cs, and one received an E. Most companies indicated that their level of disclosure changed over the years as a result of (a) familiarising themselves with the CDP questionnaire and the scoring methodology, (b) improving their internal reporting system, and (c) including more countries or facilities (cf. Company B, personal communication, April 23, 2013; Securitas, personal communication, April 17, 2013; Trelleborg, personal communication, March 8, 2013). Another aspect affecting the level of disclosure relates to the three scopes of emissions, as defined in the GHG Protocol. While the majority of companies report their scope 1 and 2 emissions, scope 3 emissions (i.e. indirect emissions from sources outside the company but that result from its activities, for example from transportation in the upstream or downstream supply chain) were introduced more recently and are more difficult to measure. Therefore, with a few exceptions most of the reference companies are reporting their scope 3 only partially, if at all (cf. Boliden Group, personal communication, March 14, 2013; Coloplast, personal communication, April 12, 2013; William Demant, personal communication, March 15, 2013).

Although the CDP also evaluates the performance of participating companies, many of the interviewees felt that the main focus remains on the disclosure score. While they acknowledged that increasing transparency was important when the Investor CDP first started, the focus should move toward improving environmental performance (Novozymes, personal communication, March 25, 2013; Trelleborg, personal communication, March 8,

2013). In general, the scoring methodology is often perceived as too complicated (cf. Coloplast, personal communication, April 12, 2013; Company B, personal communication, April 23, 2013; Company C, personal communication, May 7, 2013; Securitas, personal communication, April 17, 2013). This is aggravated by the fact that the constant changes in the scoring methodology decrease the value of the scores for companies because it makes, for example, comparing scores over time unfeasible (cf. Boliden Group, personal communication, March 14, 2013; Coloplast, personal communication, April 12, 2013). Company C's and Skanska's representatives furthermore criticised a lack of transparency of the final scoring for each text-based question seeing as respondents do not receive in-depth information on how each individual score was calculated but merely accumulated scores for the modules (personal communication, May 7, 2013; personal communication, May 8, 2013). However, the majority of companies rely on CDP scores for benchmarking both within their sector as well as geographic regions (cf. Company B, personal communication, April 23, 2013; Coloplast, personal communication, April 12, 2013; NORDEN, personal communication, March 26, 2013). One of the interviewees criticised the rigidity of the scoring methodology that leaves them "without any maneuver space" in terms of how questions need to be answered to be awarded points for the scoring (NORDEN, personal communication, March 26, 2013). In the past this was a problem for service companies, in particular, for which it was difficult to answer certain parts of the questionnaire given the non-producing nature of their operations. However, over the years the questions and set-up of the request were adjusted to suit both producing and service companies (Securitas, personal communication, April 17, 2013).

Due to the comprehensiveness and set-up of the CDP questionnaire many of the interviewed representatives described the process of providing responses as complicated (cf. Coloplast, personal communication, April 12, 2013; NORDEN, personal communication, March 26, 2013), cumbersome, and time and resource-intensive (Company B, personal communication, April 23, 2013). Though calculating the exact amount of time spend on responding to the CDP is difficult, the average estimates amount to two to three weeks, including data gathering, entry and completion of the questionnaire. However, the time spent on the CDP in individual companies vastly differs, depending on the size of the company, the resources made available, and the familiarity with questionnaire and scoring methodology. The web-based interface for data entry is perceived to be user-unfriendly by some interview subjects (cf. Coloplast, personal communication, April 12, 2013). As mentioned in the section introducing the Investor CDP, the questionnaire as well as the scoring methodology have been subject to changes every year since the CDP is still trying to optimise them. However, these constant adjustments render responding to the CDP more difficult for participating companies: "Instead of having it easier in subsequent years, we have to increase the resources for disclosing our emissions to the CDP to be able to adjust to the changes made in the questionnaire and scoring methodology" (NORDEN, personal communication, March 26, 2013). Approximately half of the reference companies involve consultants at various stages of disclosing to the CDP (cf. William Demant, personal communication, March 15, 2013; Company B, personal communication, April 23, 2013; Boliden Group, personal communication, March 14, 2013; Securitas, personal communication, April 17, 2013). Some employ consultancy to assist with the data gathering or the completion of the questionnaire while others engage them for a final check of their response. In this context, one of the companies interviewed questioned the quality and relevance of the disclosure and performance scores seeing as in their opinion involving consultants could help to increase scores without actually improving disclosure and environmental performance (Company A, personal communication, April 15, 2013).

4.1.4 Benefits of the CDP according to reference companies

The second part of the first research questions aims to identify benefits companies receive by participating in the CDP. When asked, the representatives of the reference companies came up with multiple advantages, which to some extent overlap with the drivers for participation in the CDP. In contrast to the findings from academic literature and the CDP the nature of their answers made a different grouping of the benefits necessary: instead of categorising them according to financial, legal, competitive and strategic aspects they are organised around the three key themes communication and stakeholder engagement, recognition, and internal strategies and decision-making.

Communication and stakeholder engagement

Participation in the CDP in general as well as disclosure and performance scores are evaluated as assets for both external and internal communication purposes by most of the companies. Trelleborg, for example, stated that "the transparency that the CDP creates is of great value to us and our dialogue with external stakeholders" (personal communication, March 8, 2013), a view shared by Skanska (personal communication, May 8, 2013). Furthermore, data from the CDP responses is used to answer other carbon-related requests from investors (Coloplast, personal communication, April 12, 2013). Similarly, NORDEN described how participation in the CDP allowed them to improve the relationship with both investors and customers, using CDP data to report on their progress in reducing carbon emissions and as a "vehicle for discussion" (personal communication, March 26, 2013). Securitas emphasised the usefulness of the CDP for internal communication, a statement supported by Company C (personal communication, April 17, 2013; personal communication, May 7, 2013). Moreover, Securitas also recognised positive effects on employee engagement: "The CDP scores are an 'eye-opener', a way to motivate our business units and employees to work on reducing our emissions" (personal communication, April 17, 2013).

Recognition

As has been discussed above, one of the reasons for companies to join green clubs is to benefit from their positive reputation. Almost all interview partners alluded to the high level of positive media exposure and recognition the CDP and their businesses by extension receive from both investors and other external stakeholder, such as civil society and NGOs (cf. NORDEN, personal communication, March 26, 2013; Trelleborg, personal communication, March 8, 2013). As Novozymes' representative put it "it's beneficial to be part of something this significant and well-recognised: the CDP enhances the credibility of our environmental actions" (personal communication, March 25, 2013). Finally, the positive brand image of the CDP enabled reference companies to solidify their relationships with a range of relevant actors, primarily investors and customers (cf. NORDEN, personal communication, March 26, 2013).

Strategic orientation and internal processes

The majority of benefits identified by the companies interviewed were related to their strategic orientation and other internal processes. A few interviewees commented on how the CDP enabled them to better understand the environmental impacts, risks and opportunities of their business activities by compelling them to deal with these issues (cf. Company B, personal communication, April 23, 2013; Coloplast, personal communication, April 12, 2013): "The CDP creates a sense of self-awareness" (Boliden Group, personal communication, March 14, 2013) and "makes you stop and think – it forces you to be conscious of the environmental choices you make" (William Demant, personal communication, March 15, 2013) . The Boliden Group's representative as well as a few other interview subjects stated that data and information gathered for the CDP responses act as a

basis for internal strategic discussions and informed the overall orientation of their corporate environmental programmes (cf. personal communication, March 14, 2013; William Demant, personal communication, March 15, 2013). Moreover, three companies stressed how responding to the CDP positively influenced their future environmental strategies, encouraging them to take progressive actions, for example with regard to the management of scope 3 emissions or the setting of ambitious reduction targets (Coloplast, personal communication, April 12, 2013; Company A, personal communication, April 15, 2013; Company B, personal communication, April 23, 2013).

In terms of internal processes, despite the time and resource intensity of disclosing to the CDP, many companies named overall simplification of the reporting process and time savings as one of the programme's advantages (cf. Coloplast, personal communication, April 12, 2013; NORDEN, personal communication, March 26, 2013; Novozymes, personal communication, March 25, 2013; Securitas, personal communication, April 17, 2013). Given the fact that the CDP is already the largest and most comprehensive voluntary global carbon disclosure programme and likely to become mainstream, companies have to respond to fewer other carbon-related investor request. Instead of answering multiple similar questionnaires they can provide those stakeholders with their CDP responses, saving time and internal resources. In this context, Company B's representative stated that the company also benefited from the CDP's integration with other VEPs, most notably the Dow Jones Sustainability Index, allowing them to streamline their sustainability reporting (personal communication, April 23, 2013). As of 2013 the Dow Jones Sustainability Index[6], one of the oldest sustainability indexes, uses the same questions for climate change related data as the Investor CDP (CDP & ROBECOSAM, 2013). Finally, as already discussed in Ch. 4.1.2 a few of the reference companies use CDP data and scores for competitor analyses and to benchmark their performance within and across sectors as well as geographic regions (Coloplast, personal communication, April 12, 2013; NORDEN, personal communication, March 26, 2013; Novozymes, personal communication, March 25, 2013).

Other benefits

A few of the benefits described by the interviewees fit none of the three aforementioned categories. Novozymes described the positive effect good CDP scores have on the company's PR, media, and sometimes marketing. In addition, their representative mentioned that the CDP acts as a platform for "knowledge and best practice sharing" (Novozymes, personal communication, March 25, 2013.), a view shared by NORDEN and Company C. NORDEN's interview partner emphasised that the CDP enabled them to not only compare their own performance to their competitors but to also learn from other companies participating in the CDP, for example by "seeing what they do in terms of carbon management, environmental key performance indicators, reduction targets or internal incentives to achieve environmental objectives" (personal communication, March 26, 2013). Company C's representative added that, in particular, the annual launch and result presentations organised by the CDP often offered opportunities to discuss the latest developments in the field (personal communication, May 7, 2013). Table 4-2 summarises the benefits of participation in the CDP as perceived by the reference companies.

[6] For more information on the Dow Jones Sustainability Index please refer to http://www.djindexes.com/sustainability/.

Table 4-2 Benefits of engaging in voluntary environmental disclosure according to reference companies

Category	Benefits according to reference companies
Communication and stakeholder engagement	Improve external communication and stakeholder engagement
	Improve internal communication and employee engagement
Recognition	Positive media exposure and recognition
	Improve investor and customer relations
Strategic orientation and internal processes	Improve understanding of environmental impacts of business activities and identify risks and opportunities
	Inform and improve internal environmental programmes and strategic orientation
	Simplification and streamlining of reporting process
	Benchmarking
Other benefits	Improved PR, media, and marketing
	Knowledge and best practice sharing

4.1.5 Critique and suggestions for improvement

Overall, the majority of companies were satisfied with the CDP. However, one company has considered quitting the disclosure scheme because they thought that given the involvement of consultancy the scores did not necessarily reflect the true environmental performance of a company (Company A, personal communication, April 15, 2013). The majority of critical comments pertains to the set-up of the questionnaire and the response process and has been discussed in section 4.2.3. Further criticism and suggestions for improvements voiced by interview partners included a call for greater collaboration between different voluntary disclosure schemes modelled after the global, uniform standard for the annual reporting of financial data, ultimately resulting in the "perfect integration of sustainability and financial data" (Company B, personal communication, April 23, 2013). Some of the interview partners would welcome a closer connection between investors and responding companies (cf. Boliden Group, personal communication, March 14, 2013; Novozymes, personal communication, March 25, 2013). They criticised the lack of opportunities for direct dialogue with CDP member investors and would prefer to receive information on which shareholders in particular have asked the CDP to request their participation. While the CDP is well-known within the business realm, Trelleborg's representative would like to see the CDP's visibility outside this sector increase, especially with regard to civil society (personal communication, March 8, 2013). The interviewee at Novozymes suggested to improve the value responding companies can extract from the CDP, for example by rewarding companies with high disclosure and performance scores by providing closer access to investors and other important stakeholders to drive sustainability agendas (personal communication, March 25, 2013). Finally, Company C's representative was interested in learning more about the CDP's long-term strategy regarding the use of the substantial amounts of data they are accumulating (personal communication, May 7, 2013). In this context, Skanska's representative questioned whether the volume of in-depth information and data that the CDP gathers is in all cases necessary and relevant to investors' and customers' needs or if simpler, less comprehensive questions might suffice for some issues, such as reporting the full list of emission factors for example (personal communication, May 8, 2013).

4.2 Comparative analysis of benefits from three perspectives

Drawing on the findings from the literature review, CDP documents and the interviews, the benefits of participation in the CDP are compared. While academic literature as well as the

CDP assessed the benefits from the perspective of multiple stakeholders involved, inter alia investors, companies, civil society, the interviews asked specifically about benefits from a business perspective. Although the findings from the interviews are organised differently, this comparison is based on the classification used in Ch. 3.3.

Financial aspects

When asked if participation in the CDP had any financial impacts on their company (both in terms of savings and investments) the overall answer was negative (cf. Boliden Group, personal communication, March 14, 2013; Company A, personal communication, April 15, 2013). Skanka's representative explained that for them "the CDP is a tool for communicating our carbon management and performance but it does not drive our agenda" (personal communication, May 8, 2013). However, most companies conceded that separating the effects of the CDP from the impacts of their other environmental management strategies and tools was difficult (cf. Company B, personal communication, April 23, 2013; Novozymes, personal communication, March 25, 2013). Nevertheless, they felt that financial benefits were more likely associated with their broader environmental strategies, EMS and sustainability reporting than their response to the Investor CDP (cf. NORDEN, personal communication, March 26, 2013; William Demant, personal communication, March 15, 2013). Thus, there is a clear disconnect between the findings of academic literature, the way the CDP markets itself and the experience of the reference companies. Both academic literature and the CDP put great emphasis on short- and long-term savings whereas the reference companies did not find that participation in the Investor CDP greatly affected their financial performance. Interestingly, none of the interviewees felt that disclosing to the CDP allowed them to obtain environmental price premiums due to customers' willingness to pay more for products and services that are perceived to be "green". This could, however, also be a result of the nature of the products and services provided by the reference companies.

Legal aspects

Interestingly, none of the companies interviewed mentioned any benefits related to legislative or regulatory aspects. While this subject was part of almost all academic analyses of the CDP it was also referenced by the CDP itself. Furthermore, interactions with regulatory bodies are mentioned explicitly in two parts of the Investor CDP: the strategy section and as drivers for climate change related risks and opportunities. The eleven reference companies, however, never even touched upon topics such as improving their rapport with regulatory authorities or gaining leverage in the policy-making process. Yet, this discrepancy must not necessarily refute findings from academic literature but could merely reflect the limited sample of companies that were interviewed. As discussed in the methodology chapter the small sample size does not allow for generalisations to be made seeing as the group of interviewees is not representative of the full population of corporations reporting to the CDP.

Competitive aspects

Both academics and the CDP stress how responding to the information request may help participants to obtain a competitive advantage and strengthen their market position. During the interviews, none of the reference companies stated directly that responding to the CDP had increased their competitiveness or improved their market position. Rather most of the interviewees thought that participation was necessary because it was demanded by important investors or because the CDP was moving toward becoming mainstream in their individual sector (cf. Coloplast, personal communication, April 12, 2013; Novozymes, personal communication, March 25, 2013). However, one of the interview subjects described how receiving good disclosure and performance scores was an asset for marketing purposes. In

addition, almost all reference companies appreciate the positive media exposure and high level of recognition the CDP and they by extension receive. Another area in which all three sources concur is the CDP's usefulness as a benchmarking tool. The CDP's effect on respondents' greenhouse gas emissions as described by the CDP and academics was not referenced by any of the companies interviewed. However, again this merely serves to show that for those eleven companies an increased environmental performance in terms of emissions was not on the top list of benefits they associate with the CDP.

Strategic aspects

Strategic benefits were of significance for reference companies, the CDP, and academic literature alike with a similar list of identified benefits (cp. Table 4-3). Reference companies said that they mainly benefit from developing a deeper understanding of the environmental impacts of their operations and identifying and subsequently managing climate change related risks and opportunities, an aspect also present in the literature and one of the main selling points advertised by the CDP. The second group of relevant advantages linked to participation in the Investor CDP refers to the management of stakeholder and investor relations which have, in most cases, been improved. In general, the focus of the companies interviewed was on practical issues, such as improving their internal climate change strategies as well as simplifying and streamlining the reporting process. One of the few differences was that none of the interviewees mentioned if responding to the CDP had led to new business opportunities. Furthermore, two of the reference companies praised the collaborative nature of the CDP and stressed how they could benefit from knowledge and best practice sharing among respondents.

All in all, while academic literature and CDP to a great extent concur in their portrayal of the benefits associated with responding to the Investor CDP the interviews with the reference companies revealed new aspects, such as the benefits associated with sharing knowledge and best practices during CDP presentations and workshops, the simplification and streamlining of sustainability reporting processes, or the significance of integrating different voluntary disclosure schemes. At the same time, some of the statements conflicted with findings from the other two sources. Contrary to benefits discovered by the latter, none of the interviewed reference companies mentioned legal benefits. Even more surprisingly is that the majority of interviewees did not believe that responding to the CDP alone resulted in any tangible, monetary benefits.

Table 4-3 summarises and compares the benefits based on the analysis of all three sources of information (i.e. academic literature, CDP documents, interviews with reference companies).

Table 4-3 Comparison of benefits of engaging in voluntary environmental disclosure according to academic literature, the CDP, and the reference companies

Category	**Benefits academic literature**	**Benefits CDP**	**Benefits reference companies**
Financial	Lower information costs for green investors	Lower information costs for green investors	No financial benefits were identified
	Short- and long-term savings (e.g. through decreased greenhouse gas emissions and thus lower energy costs)	Short- and long-term savings (e.g. through decreased greenhouse gas emissions and thus lower energy costs)	
	Increased profits due to savings and willingness of green customers to pay environmental premium		
Legal	Gain leverage in policy-making processes	Improve performance for mandatory reporting	No legal benefits were identified
	Gain influence on regulatory processes		
	Get ahead of regulatory curve		
Competitive	Improved market position and competitive advantage	Improved market position and competitive advantage	Positive media exposure and recognition
	Strengthen brand image and reputation	Increase trust and strengthen brand image and reputation	Improved marketing
	Improved environmental performance in terms of greenhouse gas	Improved environmental performance in terms of greenhouse gas	Benchmarking
	Benchmarking	Benchmarking	
Strategic	Identify and realise new business opportunities	Identify new business opportunities	Improve understanding of environmental impacts of business activities and identify risks and opportunities
	Legitimatise environmental management by making emission data publicly available and the company accountable	Identify risks and risk mitigation strategies to increase resilience	Inform and improve internal environmental programmes and strategic orientation
	Improved rapport with external stakeholders	Identify and rectify inefficiencies	Simplification and streamlining of reporting process
	Improved relationship with employees	Improve stakeholder engagement	Improve external communication and stakeholder engagement
		Employee awareness and engagement	Improve internal communication and employee engagement
		Improve internal communication and information sharing	Improve investor and customer relations
		Improve corporate environmental governance	
Other	No other benefits were identified	No other benefits were identified	Knowledge and best practice sharing

5 Case Study: The Company

This chapter introduces the case company The Company and describes its operational context, business activities, and environmental and carbon management. Furthermore, it provides a gap analysis assessing the environmental data The Company currently gathers against the requirements of the Investor CDP.

5.1 The Company in brief

The Company, founded in 1989 – with history that goes back to 1949 – is a Swedish corporation operating in the field of non-fossil fuel heating systems for both business and private customers. Its main markets are located in Northern Europe but it is also present in other European countries and in some other regions. The Company's headquarters are located in Sweden with production facilities and sales operations worldwide. Since 1997 the parent company, responsible for Group-wide tasks such as strategic planning, financing, acquisitions, and coordinating the business areas, is listed on the Stockholm Stock Exchange. The Company employs more than 8,000 people at 16 facilities in Europe, North America and Asia (The Company, 2013d). Net sales in 2012 amounted to approximately SEK 9.2 billion (2011: SEK 8.1 billion), accounting for an overall growth of 12.9 per cent compared to 2011 (The Company, 2012a, 2013f). Business operations are organised decentrally in three business units (BU) with their own operational management (cp. Figure 5-1). The corporate centre is – for a company of that size – rather small with a staff of six (Contact A, personal communication, April 29, 2013).

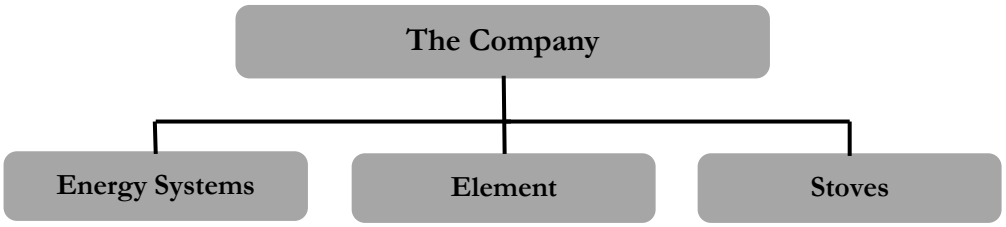

Figure 5-1 Company structure of The Company

Source: Adapted from The Company (2013f)

Energy Systems division

Energy Systems offers domestic heating products in eight categories: heat pumps, domestic boilers, ventilation, district heating, solar panels, domestic water heaters, cooling, washing machines and dryers. All products are ready for use when they leave the production facilities and are sold mainly to installers and other qualified professionals. Generating 63% of the total net sales and 75% of operating profit in 2012 The Company Energy Systems is the largest BU (The Company, 2013f). Their flagship products are heat pumps for which The Company is the market leader in Europe (The Company, 2012a). The company offers three types of heat pumps that are distinguished based on the heat source they use: (a) ground source, (b) air source, and (c) exhaust air (Contact A, personal communication, March 13, 2013).

Element division

Element produces components and systems for industrial electrical heating and electric resistor applications, mostly working in a B2B context. In total, they offer the following nine product groups: tubular elements, aluminium elements, foil elements, thick film elements,

PTC (positive temperature coefficient) elements, high-power elements, open spirals, heating cables and ceramic elements (The Company, 2012a). Tubular elements for heating purposes, the most sold product of the Element division, are very versatile and can be shaped according to the needs of the customer (Contact A, personal communication, March 13, 2013). They are used, for example, in kettles and cooking stoves, in engines and production processes to heat up media either directly or indirectly. The BU's net sales amount to 25% in 2012 with operating profits of 14% (The Company, 2013f).

Stoves division

Stoves provides domestic customers with several types of freestanding and insert wood-burning stoves and chimney systems (The Company, 2012a). The biggest single markets are Norway and Sweden. However, the Stoves divison is also the European market leader for wood-burning stoves, generating 12% of The Company's total net sales and around 11% of its operating profits in 2012 (The Company, 2013f).

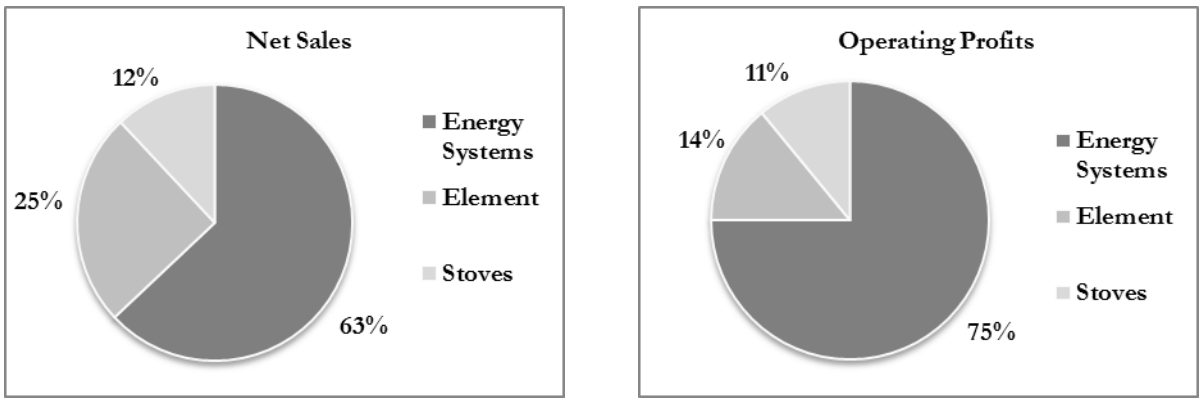

Figure 5-2 The Company: net sales and operating profits in 2012

Source: Data from The Company (2013f, p. 5)

The Company's portfolio includes many environmentally adapted products that contribute to sustainable development by increasing energy-efficiency and utilising renewable energy. Heat pumps, for example, allow customers to substitute geothermal energy for fossil fuels while also improving the heating economy. Furthermore, resistors manufactured by the Element division are, inter alia, used in a new generation of wind turbines and help to increase the energy efficiency of electric motors. Another example includes elements for hybrid vehicles (The Company, 2013c).

5.2 Corporate environmental responsibility at The Company

The Company has been actively engaging in sustainability activities since the 1990s, for example by obtaining its first ISO 14001 certifications and having a dedicated sustainability chapter in the Annual Report ever since The Company was introduced at the Stockholm Stock Exchange in 1997(Contact A and B, personal communication, May 13, 2013; The Company, 2013c). Environmental issues were managed primarily at a local level, for example through internal environmental policies at each production facility. In 2010 it was decided to extend the scope of environmental management to the whole Group and to develop a more structured approach to corporate environmental responsibility at The Company by, inter alia, adopting a common environmental policy, and Group-wide targets. Changes were driven by the Board of Directors who considered it a necessity given the corporation's continuing growth and associated risks, in particular with regard to newly acquired production facilities in China, Russia, and Mexico (Contact A, personal communication, March 13, 2013; Contact B,

personal communication, April 25, 2013). In addition, there was increasing interest in The Company's environmental and social performance and pressure from investors and other external stakeholders. The Board decided that The Company's vision and business activities needed to be integrated with the concepts of sustainability and social responsibility. This led to the adoption of the GRI as the company's sustainability reporting standard in 2010. However, as The Company's CEO put it "While sustainability and sustainable value creation are relatively new term, the concepts they represent have always been part of the way we work […]." (The Company, 2012b, p.6). The majority of The Company's product portfolio can be classified as clean technology, energy-efficient products as they enable customers to reduce their energy use which in turn decreases their greenhouse gas emissions (The Company, 2012b).

In 2010 The Company adopted its first Group-wide environmental policy. Key themes include:

- providing energy-efficient, environmentally adapted products that utilise renewable energy as far as possible,
- life cycle perspective,
- continuous improvement of the environmental management system,
- sustainable supply chain management,
- use of The Company's own heating, ventilation and cooling equipment at production sites,
- stakeholder engagement, and
- employee training (The Company, 2010).

The same year also saw the release of a reviewed sustainability strategy, including a series of guidelines and policies and an updated Code of Conduct modelled after the ISO 26000 standard (Contact A and B, personal communication, May 13, 2013). Furthermore, sustainability was integrated into The Company's corporate values: "At [The Company] we work to create added value for our stakeholders – but without compromising our commitment to quality, sustainable development and corporate social responsibility" (The Company, 2011, p. 5). Section 3 of the Code of Conduct is dedicated to reducing environmental impacts by "apply[ing] a holistic view of environmental work in everything from product development activities, manufacturing and choice of materials to transport, product functionality and the potential for recycling at the end of a product's useful life" (The Company, 2011, p. 19). One of the key elements of The Company's environmental strategy is obtaining ISO 14001 certification for all production facilities (The Company, 2012b). As of 2011 nine out of 32 production plants were certified (2011: nine out of 29) (Contact A, personal communication, April 16, 2013). As part of its environmental management systems The Company is committed to continuous improvement in all its business areas which lead, for example, to a decrease of average wood consumption of wood stoves from 6kg /kWh in 1965 to 1.3 kg/kWh in 2010 (The Company, 2012b). While The Company's products contribute to lowering greenhouse gas emissions The Company itself emits greenhouse gases to the atmosphere during the manufacturing process.

Environmental performance

The latest sustainability report for 2012 gives on overview of The Company's environmental performance in a few key areas: environmental aspects, energy and water consumption,

emissions to the atmosphere, use of materials, and waste[7]. The Company identifies the use of natural resources, use of chemicals, emissions to the atmosphere, and waste as the most important environmental aspects of their operations. In addition, they recognise the role indirect environmental impacts from suppliers and transportation play. With regard to energy, The Company consumed a total of 130 GWh (2011: 111 GWh). Despite the slight increase energy consumption per million SEK further decreased compared to previous years due to the implementation of energy-saving and efficiency increasing measures, such as the installation of heat pumps and upgrade of insulation. About half of The Company's total energy consumption is satisfied by renewable energy sources, such as biofuels, wind, solar and hydropower. While total water consumption increasing from 205,000m³ in 2010 to 240,000m³ due to growing production levels, the net m³ per million SEK decreased. Emissions to the atmosphere at The Company consist mainly of carbon dioxide (CO_2) and volatile organic compounds (VOCs). Total CO_2 emissions amounted to about 19,000 tonnes (2011: 29,000 tonnes), out of which 45% (2011: 75%) were attributed to indirect emissions from purchased electricity. The significant reduction of carbon emissions compared to the previous year is due to The Company's change from traditional to green electricity for all European facilities and installing heat pumps at a number of plants. Furthermore, as a result net emissions per million SEK also decreased considerably. VOC emissions could be reduced from 24 tonnes in 2011 to 20 tonnes and consisted mainly of sulphur dioxide and nitrogen oxides from the use of fossil fuels. With 70% the main material used during production processes at The Company are various metals (e.g. steel, iron, brass). In addition, with 7% each magnesium oxide and components are essential inputs for the manufacturing of heating products. Figure 5-3 gives an overview of all major materials consumed by The Company.

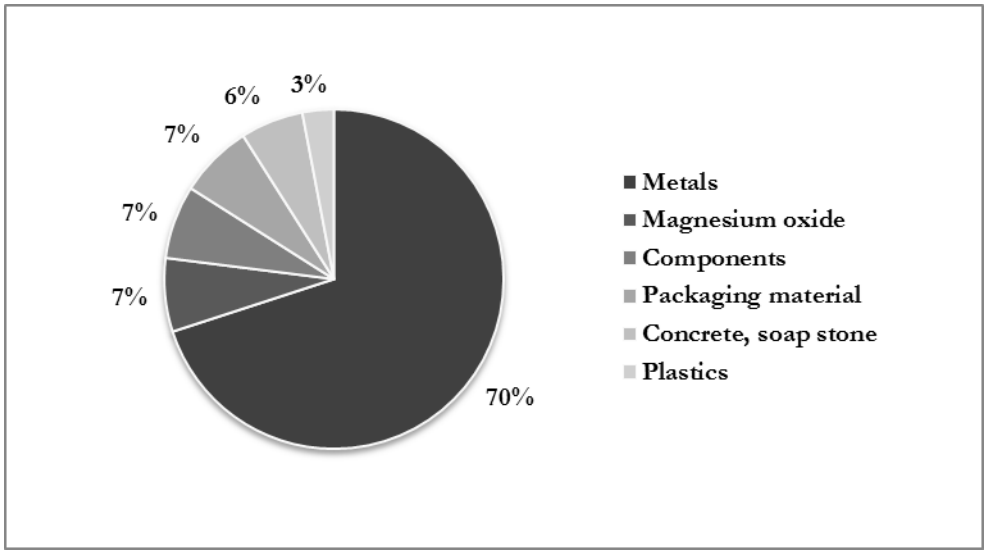

Figure 5-3 The Company: Share of materials used at The Company

Source: Data from The Company (2013c, p. 15)

Finally, The Company produced 11,200 tonnes of solid waste (compared to 13,100 tonnes in 2011), 13% of which are hazardous. 75% of the total waste, in particular metals and energy, are recycled. Wastewater contains mainly organic substances resulting from cleaning processes and sanitary facilities. All wastewater is treated in municipal or other sewage plants.

[7] If not indicated otherwise all information and data in this section is taken from The Company's 2012 and 2011 Sustainability Reports (The Company, 2012b, 2013c).

Part of the GRI methodology and thus The Company's Sustainability Report is the assessment of environment-related risks and opportunities. The main risks identified for 2012 are historical pollution at a few of The Company's production facilities and risk of flooding due to changing weather patterns at one plant. The greatest opportunity appears to be the increasing environmental awareness and increasing interest in environmentally friendly products in civil society. In addition, the 2012 Annual Report (The Company, 2013f) shows how The Company's three business units integrate environmental considerations with their strategy, for example with regard to future opportunities. The Company recognises the growing interest in renewable energies as well as the expanding market for sustainable energy technologies as a business opportunity.

Environmental management at The Company is organised in the following way. Each production plant has local quality and environmental management staff. There is no position dedicated to environmental management at the BU level. However, in the corporate centre there are two managers who have a dual role. On the one hand they are responsible for environmental and sustainability activities at the Group-level. This includes, in particular, the annual sustainability questionnaire sent out to all companies in preparation of the Sustainability Report, data collection and environmental audits of The Company's production facilities. On the other hand, since they are employed by the production plant connected to the headquarters, they also act as local quality and environmental managers for the plant (Contact A, personal communication, March 13, 2013; April 16, 2013). In addition, external environmental consultants are hired from time to time for certain tasks (e.g. relating to the Sustainability Report).

Sustainability Report

As mentioned above in 2010 The Company started reporting their sustainability performance according to the GRI, a global non-profit organization providing companies with a sustainability reporting framework (GRI, 2013). The framework covers economic, social and environmental aspects, including provisions on strategy, organisation, governance, stakeholder engagement, management approaches and a set of environmental, economic and social performance indicators. A certain level of disclosure corresponds to a specific GRI level, ranging from C for entry-level respondents and B for partial to A for full disclosure. The Company was previously meeting the level C criteria, but stepped-up activities in 2012 and is currently reporting at the B level. There is a long-term target in place to achieve level A status (The Company, 2012a). Basis for the GRI is the data gathered through The Company's internal sustainability questionnaire.

Currently, all production facilities participate in the annual survey. It is sent out in November with a deadline for responding in late January so that data can be analysed and prepared for the Sustainability Report, which is published in early May (Contact A, personal communication, March 13, 2013; April 16, 2013). The questionnaire is divided into eleven sections, each pertaining to a certain topic, inter alia environmental legislative requirement, training, social responsibility and environmental data (cp. Table 5-1). The Company uses the GHG Protocol to calculate its emissions. As of 2013 scope 1 and 2 emissions are calculated whereas scope 3 emissions are not measured yet. However, first attempts at managing these indirect emissions have been taken (The Company, 2012b).

Table 5-1 Overview of The Company's internal sustainability questionnaire

Section	Topic
1	Overview of annual activities (including objectives, targets, highlights)
2	Administrative information
3	Environmental permits and licenses, environmental legislation, health and safety requirements, accidents
4	Environmental, health, safety and social requirements from customers
5	Environmental management system and other management systems
6	Environmental data:
6.1	Energy consumption
6.2	Water consumption
6.3	Material and chemical use
6.4	Emissions to the atmosphere
6.5	Waste water
6.6	Solid Waste
6.7	Transport
6.8	Product development of sustainable energy solutions
6.9	Performance of suppliers
7	Work safety
8	Training and education
9	Social responsibility activities (e.g. community outreach)
10	Sustainability-related financial data (e.g. investments, costs, savings)
11	Product and producer responsibility

Source: The Company (2013g)

5.3 The Company and the CDP

The Company has been invited to partake in the Investor CDP since 2009. The requests were made on behalf of two to five specific investors (Contact A and B, personal communication, May 13, 2013). Apart from the CDP's request in the name of their member investors The Company has not been approached directly by any investor or customer asking specifically for responding to the CDP. However, since 2007 interest in The Company's greenhouse gas emissions has increased: a few external stakeholders have contacted the company inquiring about carbon-related figures and information but to a less detailed degree than the Investor CDP (Contact A and B, personal communication, May 13, 2013). Still, the corporate environmental management team is aware of the significance of the CDP. The increasing prominence of the programme among investors and other stakeholders may lead to growing interest in the public disclosure of The Company's carbon emissions, in particular given the company's vision to provide their customers with "world-class solutions in sustainable energy" (The Company, 2012b, p. 22). Participating in the CDP could help The Company to strengthen their investor relations by making their environmental engagement more transparent and trustworthy (Contact A and B, personal communication, May 6, 2013). Moreover, as has been stated by most of the reference companies (cp. Ch. 4.1.4) The Company regards responding to the Investor CDP as an opportunity to increase their understanding of the environmental impacts their operations have and how to better manage them since it is moving toward becoming an industry-wide standard and offers a framework for continuously improving a company's carbon disclosure and performance (Contact A and B, personal communication, May 6, 2013).

A brief analysis of The Company's main competitors reveals that only a few of them currently report their emissions to the CDP, mostly as part of the Supply Chain not the Investor CDP. Against this background participating in the CDP could give credibility to The Company's business activities and strengthen their market position as provider of sustainable energy solutions.

5.4 Gap analysis

As described in the previous sections, The Company gathers data on carbon emissions as part of their sustainability questionnaire. This section provides a gap analysis of the available information and data and the requirements of the CDP questionnaire. Rather than examining all questions in detail this analysis will focus on the major elements, in particular risks and opportunities and emissions, and highlight both the greatest data and strategy gaps at The Company. A discussion of potential benefits of joining the Investor CDP is presented in Ch. 6.2.

The CDP Investor questionnaire has already been described briefly in Ch. 3.2.1. It is organised around four broad themes– introduction, carbon management, risks and opportunities, and emissions – which are divided into 15 categories. The following analysis is based on the CDP's *Guidance for companies reporting on climate change on behalf of investors & supply chain members 2013* (CDP, 2012e). The introductory page, covering general information on the reporting company, the reporting period, geographic scope and currency of disclosure, requires basic information and hence is not further considered here. In general, the questions of the Investor CDP can be grouped into two categories: questions calling for (a) qualitative or (b) quantitative answers.

Management module

The management module pertains to the respondents' governance, strategy, target and initiatives, and communications and calls mostly for narrative descriptions. With regard to corporate governance the CDP is interested in where the highest level of direct responsibility for climate change related issues within the corporation lies and what type of incentives are offered as part of the carbon management, if any. The Company should be able to answer these questions based on their internal environmental management. The strategy section focuses on climate change-related risk management. At the moment The Company has no comprehensive, formal, documented system to evaluate and manage risks and opportunities linked to climate change in place. However, the internal sustainability questionnaire contains a question asking facilities to assess if the site is located in an area that is sensitive to extreme weather conditions or other effects of climate change (The Company, 2013g). In addition, climate change is not sufficiently integrated into the company's business strategy (cp. Questions 2.1 and 2.2). Although The Company's business strategy includes a section on the significance of environmental issues, it focuses on product development and functionality, material use, transport and end-of-life-treatment. Climate change or greenhouse gas emissions are not mentioned explicitly (The Company, 2013e). According to responsible representatives of The Company, however, management is aware of the relevance of climate change and has plans to broaden the scope of the environmental strategy to include climate change (Contact A and B, personal communication, May 13, 2013). With regard to interactions with external stakeholders, such as policy-makers, regulatory authorities or other actors, to change climate change policies directly or indirectly (cp. Question 2.3), The Company is active on a local basis, mainly in the communities where its production plants are situated (e.g. collaboration with local governments and administrations one issues such as air quality) but lacks activities on a higher, Group-wide level (Contact A and B, personal communication, May 13, 2013).

Of special interest given The Company's product portfolio is the target and initiatives section where the company could capitalise upon the environmentally friendly nature of most of their products which enable customers to reduce greenhouse gas emissions (cp. Question 3.2 "Does the use of your goods and/ or services directly enable greenhouse gas emissions to be avoided by third party?"). At the moment, carbon emissions are measured as part of internal key performance indicators but there are no official emission reduction targets in place at The Company (2013e). Yet, establishing absolute or intensity targets is one of the key elements of the Investor CDP and important both in terms of the disclosure and performance score. Therefore, the lack of targets is one of the major strategy gaps (cp. Question 3.1) but one that will be closed in 2014 when the case company expects to implement Group-wide reduction targets (Contact A and B, personal communication, May 6, 2013). Despite the current absence of documented reduction targets The Company should be able to provide a few reduction emission initiatives, relating for example to energy efficiency or low carbon energy installations (cp. Question 3.3) as measures to reduce carbon emissions are part of the company's sustainability questionnaire. Examples implemented at The Company in previous years include, inter alia, the installation of heat pumps and energy-efficient lighting at several production facilities (The Company, 2012b). The final question of the management module relates to the communication of climate change issues and the respondent's greenhouse gas emissions outside the CDP questionnaire. The Company publishes relevant information both in their Sustainability Report as well as in the Annual Report.

Risks and opportunities module

The next module of the Investor CDP covers climate change related risk and opportunities. In the risk section respondents are asked to identify current and future climate change risk that potentially impact the company's operations in any way (e.g. costs of production, revenues) (cp. Question 5.1). The questionnaire distinguishes between three types of drivers for these risks: changes in (a) regulation, (b) physical climate parameters, and (c) other climate related developments. If a company recognises the existence of such risks it is asked to describe it with regard to (1) driver, (2) potential impacts, (3) timeframe, (4) direct or indirect impact, (5) likelihood of occurrence, and (6) magnitude of impacts. In addition, they have to elaborate on the financial implications if the risk is not dealt with, how the specific risk is managed and the costs of taking action. As always, companies have to provide justifications if they indicate that they are not exposed to such risks. As described in section 5.2 of this thesis The Company assesses environmental and climate change risks and opportunities as part of the annual GRI-based Sustainability Report. However, there is no official, documented risk assessment system in place.

A look at the latest Sustainability Report from 2012 shows that the only climate change related risk identified by The Company is the potential flooding of a production plant due to rising water levels (The Company, 2013c) which would qualify as a type (b) risk in the CDP questionnaire. In the case of the aforementioned production plant the Sustainability Report further mentions that a protective wall was erected to prevent flooding. Based on this information The Company should be able to answer all related questions for this specific risk as well. Nevertheless, it seems implausible that this should be the only climate change induced risk that The Company faces. A more structured risk analysis of The Company's operations may lead to a more comprehensive list. Below are a few examples of commonly cited risks: increasing energy taxes, stricter requirements for energy efficiency at production facilities, and reputational damages. The opportunity section parallels the risk section in the way the questions are set up. The risk assessment chapter of The Company's Sustainability Report also contains information about environment related opportunities. Again there is no special focus on climate change. Since many of The Company's products enable customers to reduce their energy consumption as well as their carbon emissions there are clearly opportunities associated with climate change the company could seize. The Company could, for example,

benefit from energy taxes, product efficiency or renewable energy regulations which are likely to increase the demand for renewable energy products such as heat pumps or solar water heaters. In addition, as already identified in the latest Sustainability Report, consumer behaviour is changing in favour of less carbon-intensive products and energy sources – a further opportunity for The Company to increase their turnover. In this context, it would be valuable for The Company to adopt a life cycle perspective on their products' greenhouse gas emissions in order to assess not only emissions from production processes but also potential emission savings during the use phase[8]. As of now, the greenhouse gas emissions of each production facility are already calculated. However, there is no information available regarding by how much the use of The Company's products decrease emissions for the consumer. The opportunity section concludes the part of the CDP questionnaire that almost exclusively calls for qualitative answers.

Emissions module

The final module of the Investor CDP relates to emissions and is divided into eight parts: emission methodology, emission data, scope 1 emissions breakdown, scope 2 emissions breakdown, energy, emissions performance, emissions trading, and scope 3 emissions. Drawing on The Company's internal sustainability questionnaire they should be able to extract relevant data for most of the question. Under the methodology section respondents are asked to provide base year emissions for scope 1 and 2 as well as information on which standard or protocol and which global warming potentials and emission factors were used to calculate emissions (cp. Questions 7.1-4). The Company is measuring their scope 1 and 2 emissions according to the GHG Protocol (cp. Ch. 5.2 and section 6.4 of the internal sustainability questionnaire) and should be able to provide the necessary figures and information. This initial overview is followed by in depth questions regarding emission data for the reporting year. The relevant emissions in metric tonnes CO_2 for both scope 1 and 2 can be calculated based on the data the corporate environmental management team gathers through the sustainability questionnaire. Seeing as the questionnaire is sent out to all of The Company's production facilities worldwide a detailed breakdown of scope 1 and 2 emissions for the countries or regions they are located in, as called for in Questions 9 and 10, can also be provided. The CDP offers five possible categories for providing specific emissions (according to business division, facility, greenhouse gas type – only for scope 1, activity, or legal structure) and encourages respondents to choose all categories for which data is available. Based on the accessible data The Company could report their emissions, for example, aggregated for each of the three business units and for each of the production plants. Finally, the CDP values third party verification of emission data (cp. Question 8.6) and allocates a sizable percentage of both the total disclosure (9-13%) and performance score (15-17%) to it (CDP, 2013h). At this point The Company's emission data is not verified by a third party (Contact A and B, personal communication, May 6, 2013).

Question 11 deals with the respondents' energy consumption, split up into fuel, electricity, heat, steam, and cooling. Again relevant data is covered by The Company's own questionnaire (cp. Section 6.1). As of 2013 a question pertaining to the low carbon electricity practices was added (cp. Question 11.4) which should be of interest to The Company seeing as the company purchases only green electricity certified with Guarantees of Origin according to the international EECS (European Energy Certificate System) standard for their facilities in Europe (Contact B, personal communication, May 6, 2013). The next section dealing with emission performance compared to the previous year is less relevant for first-time respondents such as The Company. Question 13 regarding participation in emission trading

[8] As of today, The Company only assesses the recyclability of their products from a life cycle perspective (The Company, 2013c).

schemes does not apply to The Company. The final questions of section 14 pertain to scope 3 emissions. So far The Company is not yet measuring scope 3 emissions in a structured way although initial measures toward calculating these emissions have been taken.

Table 5-2 sums up the main findings of the gap analysis. Overall, the greatest gaps are related to The Company's climate change strategy whereas the data gathered for the GRI-based Sustainability Report mostly suffices to answer relevant emission questions. This means that providing answers to the management and risks and opportunities modules may prove to be more difficult for the case company than disclosing their actual emissions.

Table 5-2 Findings from the gap analysis at The Company

	Description
Strategy gaps	Lack of formal climate change-related risk and opportunity management
	Climate change not clearly integrated into business strategy
	No engagement with external stakeholders to influence climate change policies
	Lack of established absolute or intensity emission reduction targets
	Lack of life cycle perspective regarding greenhouse gas emissions linked to products
	No third party verification
Data gaps	Scope 3 emissions

6 Analysis and Discussion

This chapter contains the application of the theory framework to the CDP to determine if the programme qualifies as a green club. Furthermore, the findings of the gap analysis are discussed with regard to how feasible and beneficial answering the CDP request would be for The Company at this point. Finally, the chapter also examines if cleantech companies such as the case company differ from other businesses when it comes to voluntary environmental disclosure in general and the CDP in particular.

6.1 The CDP – a green club?

Based on the presentation of the CDP throughout the previous sections this chapter uses the theoretical framework of Green Club Theory to analyse if the programme qualifies as a green club. So far the CDP has not yet been the subject of in-depth academic research, with the exception of a few mainly descriptive articles on the institutional set-up of the CDP (cf. Andrew & Cortese, 2011; Armstrong, 2011). As set out in Ch. 2 the definition of green clubs is rather broad and includes all voluntary programmes or schemes that "induce participating firms to incur the private costs of undertaking progressive environmental action beyond what they would take unilaterally" (Prakash & Potoski, 2006, p. 36). Below, the CDP is analysed with regard to the following main features of green clubs: (1) sponsorship, (b) target group, (c) benefits, and (d) club standards and enforcement mechanisms. The CDP is run by a not-for-profit organisation on behalf of investors which fits with the sponsorship criteria of a green club. In this context, it is important to distinguish between the investors who finance the CDP through their membership fees in exchange for the data the CDP gathers and the companies responding to the information requests. Both groups are technically members of the CDP, albeit with different roles and functions. Since this analysis is assessing if the CDP qualifies as a green club it focuses on corporate respondents. In accordance with the findings drawn from the literature review (cp. Ch. 2.1) the target group of green clubs are companies that participate voluntarily and generally incur no costs, with the exception of indirect costs associated with fulfilling the club standards. The Investor CDP is free of charge for participating companies. However, in this context it is interesting to note that although the CDP is a voluntary programme the sheer number of important investors it represents create certain pressures for companies to respond to the information requests. As has been outlined in Ch. 4.1.2 some companies, for example, are ordered directly by their major shareholders to join the CDP. Still, the majority of corporations decide to respond on their own volition.

To secure a sufficient level of participation green clubs have to offer certain benefits to prospective members, usually differentiated into club good(s), and private benefits for each club member (Prakash & Potoski, 2007; van't Veld & Kotchen, 2011). The major assets, i.e. club goods, of a green club are its positive reputation and brand image vis-à-vis external audiences which are extended to club members simply by means of affiliation. The CDP is a well-known and recognised voluntary environmental disclosure scheme both within the business sector as well as within certain realms of civil society. Many of the interviewed reference companies stated that they receive high levels of recognition and positive media exposure regarding their CDP responses. In addition, as has been delineated in Ch. 4.2 there is an array of both tangible and intangible benefits linked to participation in the Investor CDP for respondents, including, inter alia, improved stakeholder relations and management of climate change related risks and opportunities. Finally, green clubs legitimise their actions through seeking to increase social and environmental welfare. The major goals of the CDP are to increase transparency by disclosing carbon emissions and to furthermore encourage companies to reduce their emissions with obvious positive implications for both civil society and the environment. The number of companies disclosing their emissions to the CDP is constantly growing, increasing the amount of (in most cases) publicly available climate change

related information. This in turn, increases the visibility of corporations and allows for closer scrutiny of their actions by external stakeholders, such as NGOs.

Having shown that the Investor CDP fulfils the first three criteria of a green club, the final step is to analyse its institutional set up in terms of club standards and enforcement mechanisms. Membership in a green club is usually awarded based on accomplishing and maintaining certain environmental standards that typically go beyond the status quo, specific to the club. The Forest Stewardship Council for example, has a list of criteria applicants have to fulfil in order to obtain one of the FSC's three different types of certifications. Similarly, the ISO 14001 standard requires companies to undertake several activities, including inter alia review of environmental impacts and implementation of an environmental management plan, before granting certification. The Investor CDP differs from these green clubs in so far as corporations are not obliged to meet any criteria to be granted membership. Instead prospective respondents become "member" to the CDP merely by answering to the information request, irrespective of the quality of their disclosure or performance. One would expect this lenient approach to negatively affect the CDP's credibility seeing as both very environmentally progressive companies as well as laggards respond to the CDP, suggesting the danger of being perceived as mere "greenwash". However, voluntary disclosure schemes often differ from other voluntary environmental programmes in this regard given that their overall goal is to increase transparency rather than achieve a specific environmental performance target. In addition, the CDP's scoring system counteracts the potential risk of "greenwashing" by allowing interested parties to clearly distinguish between well and badly performing companies. Even companies that score low still raise the level of transparency surrounding corporate carbon emissions. Since the Investor CDP lacks club standards in the traditional sense it also does not rely on enforcement mechanisms. However, one could argue that the fact that most respondents choose to disclose their information publicly often creates incentives to improve the quality of their disclosure and their performance. Therefore, taking all points into consideration, the Investor CDP qualifies as a green club.

Having established that the CDP falls under the category of green clubs, the next step is to discuss how successful the CDP is as a green club. The two major challenges, as established in Ch. 2, refer to the Olsonian dilemma and the prevention of shirking. On the one hand, taking a look at the annually increasing number of companies responding to the Investor CDP, attracting a sufficient number of members appears to be unproblematic. Many of the reference companies stated that one of the appeals of the CDP is the high response level it achieves. Shirking, on the other hand, is less relevant for the Investor CDP given the lack of club standards: companies either respond or decline to respond to the questionnaire. Yet, one representative of a reference company criticised that disclosure and performance scores may be skewed unfairly in favour of some of the companies that involve skilled consultancies during the response process (Company A, personal communication, April 15, 2013). All in all, the CDP seems to be dealing well with the main problems green clubs often encounter.

6.2 Discussion: The Company and the Investor CDP

Based on the findings and analysis from the previous section it is clear that – if wanted – The Company would be able to respond to the Investor CDP. Seeing as it is a voluntary environmental disclosure scheme every company could technically participate in the survey. However, the level and quality of disclosure and environmental performance obviously influences the scores which are used by external stakeholders to assess respondents. As is common practice with many companies that disclose their carbon emissions to the CDP the data gathered for sustainability reporting according to GRI guidelines is suitable to be used for the CDP questionnaire (cf. Company A, personal communication, April 15, 2013; NORDEN, personal communication, March 26, 2013). In fact, based on the feedback the CDP received

by some of the responding companies asking for greater integration of the CDP and other sustainability requests to streamline the reporting process and move toward standardisation the CDP, in addition to its cooperation with the Dow Jones Sustainability Index, has recently announced to link up the GRI and their own questionnaire in the future (CDP, 2013l).

Data gaps and strategical considerations

The gap analysis has shown that The Company covers nearly all quantitative emission data asked for by the CDP in their internal sustainability questionnaire, with the notable exception of scope 3 emissions. In terms of strategy and risk and opportunity management they lack a few key elements that are of importance for receiving good disclosure and performance scores, such as emission reduction targets, a documented climate change related risk and opportunity management system or third party verification. Again, not having these features is not an obstacle to responding to the information request itself but affects the scoring. As described in Ch. 5.4 with regard to many of the strategic and data gaps listed in Table 5-2 The Company has plans to rectify the situation by adjusting their environmental strategy and management. Emission reduction targets are expected to be adopted in 2014 and the calculation of scope 3 emissions, albeit in its early stages, is being developed. In terms of other prominent gaps, referring for example to a greater integration of climate change into the business strategy, responding to the Investor CDP could act as a catalyst and further stimulate the existing internal debate. As many of the reference companies stressed, the Investor CDP can be a useful tool for informing and improving internal environmental strategies and programmes (cp. Ch. 4.1.4). So all in all, participating in the Investor CDP seems at this point to be already feasible in terms of available information and data for The Company.

Cost-benefit analysis

Taking it a step further, however, the next question is if disclosing emissions to the CDP is also beneficial for the The Company. As set out in the introduction to this thesis companies are unlikely to engage in voluntary environmental behaviour if it is not to their advantage. This does not necessarily have to translate into monetary benefits, such as savings or greater profits, but may also include intangible and difficult to quantify impacts like stronger brand image, increased business resilience or improved relationships with stakeholders. Part of determining potential benefits is considering what kind of disclosure and performance scores The Company might achieve with the information and resources currently available. While the scope of this thesis does not permit a full scoring exercise, a few general remarks about the overall direction of their scores can be made. Naturally, the scores are influenced by the quality of the responses which is turn is shaped by how much time and resources participants spend on the information request. In particular in terms of the qualitative questions of the first three modules the CDP scoring methodology favours a certain format and style that may be difficult to attain for new respondents (CDP, 2012e, 2013s). During the interviews reference companies were asked to estimate how much time and man power it takes to answer the CDP questionnaire. The approximations, ranging from a few days to several weeks, differed considerably due to the varying organisational set-up of companies, the nature of their business, the importance they attribute to the CDP and hence the resources they make available, and finally their level of experience with responding to the CDP.

Typically, first time respondents have to invest more time due to the comprehensiveness of the questionnaire and their lack of familiarity with the response formats favoured by the CDP as well as the scoring methodology (cf. Coloplast, personal communication, April 12, 2013; Company A, personal communication, April 15, 2013). Over time as companies become familiar with the Investor CDP most reference companies stated that the work hours they spend on the questionnaire decreased. One of the interviewees, conversely, mentioned that given the ever-changing nature of both questionnaire and scoring methodology and associated

necessary adjustments to their internal reporting system do not permit a decrease in costs despite their growing level of experience (NORDEN, personal communication, March 26, 2013). As with most first-time respondents receiving great scores should not be expected, in particular given The Company's limited resources and the comprehensiveness of the CDP. As outlined in Ch. 5.2 there are two managers in control of Group-wide environmental management. Given the multitude of their responsibilities (both for activities on Group-level as well as for the local plant) the amount of time they will be able to spend on the Investor CDP response is limited. The general impression of most interviewees was that it takes some time to familiarise oneself with the questionnaire, the scoring methodology and how to answer the different sections of the request (cf. Coloplast, personal communication, April 12, 2013; NORDEN, personal communication, March 26, 2013). Moreover, seeing as the CDP encourages continuous improvement scores often increase over time. All in all, it is to be expected that while The Company will be able to respond to the Investor CDP the result they will achieve will depend on how much time they will allocate to the response process.

While the scoring might be low for the first year of participation, there are other potential benefits associated with disclosing carbon emissions to the CDP. As has been pointed out above the CDP could help to improve The Company's carbon management system by encouraging the company to address climate change related issues, such as risk and opportunity management. Moreover, as mentioned by The Company's corporate environmental managers increasing transparency is likely to positively affect investor relations and increase trust in The Company's brand. In this context, The Company has the potential to capitalise on the environmentally friendly nature of the majority of their product portfolio. The significance and impacts of products that enable consumers to reduce their greenhouse gas emissions is acknowledged in the Investor CDP (cp. Question 3.2). Combining these product features with the voluntary disclosure of their own emissions could allow The Company to strengthen their position as a cleantech company and give credibility to their operations. However, in order to achieve this The Company would have to fist assess the full life cycle of their products, and in particular emission savings potentials during the use phase. Furthermore, the CDP response could be used as a marketing and PR tool. Assessing potential financial benefits is not possible within the scope of this thesis and is, as has been pointed out by most reference companies, in general a difficult task given the integration of multiple environmental activities and programmes within most corporate environmental management systems (cp. Ch. 4.2).

The gap analysis and subsequent discussion show that from an external point of view and based on the somewhat limited knowledge of The Company's operations, strategic priorities, and internal decision-making processes responding to the Investor CDP is both feasible and potentially beneficial for the case company. Ultimately, however, responsible management at The Company will have to weigh costs and benefits based on internal strategies, goals and preferences.

7 Conclusion

This chapter summarises and reflects upon the findings and discussion of previous sections. The research questions are answered and recommendations pertaining to the Investor CDP are given to The Company. Limitations of the research are discussed and suggestions for further research are provided.

7.1 Summary of findings

This thesis set out to research why companies choose to participate in voluntary environmental programmes that require them to go beyond mere legislative requirements, using the example of the Carbon Disclosure Project. The *first research question* asked what the main drivers for and benefits of companies participating in voluntary environmental disclosure in general and the Carbon Disclosure Project in particular are. The literature review, analysis of CDP documents and interviews with eleven reference companies that disclose emissions to the CDP have shown that there are multiple drivers for and benefits associated with participation in the programme. Major rationales for for disclosing carbon emissions to the Investor CDP include direct requests from important investors, indirect pressure from external stakeholders, increased transparency, credibility and recognition, improved communication, and the opportunity to benchmark the own environmental performance to competitors. Table 7-1 lists the main drivers as identified by the eleven reference companies.

Table 7-1 Main drivers for participating in the Investor CDP

External Drivers	**Internal Drivers**
Received information request from CDP	Time and resource-savings in terms of reporting greenhouse gas emissions
Directly approached by investors	To benchmark performance
Indirect pressure from external stakeholders	To increase transparency, credibility and recognition
To improve stakeholder dialogue	To use as platform for communication
	Tool for employee engagement

Although there is a general overlap between the majority of benefits, each of the three sources (academic literature, CDP documents, and interviews with reference companies) emphasises different aspects (cp. Ch. 4.2). In many instances the interviewees confirmed findings from the literature review. However, there were two interesting cases of deviations with regard to financial and legal benefits. While academic literature and the CDP maintain that responding to the Investor CDP leads to tangible benefits, such as savings and increased profits, the reference companies felt that it was difficult to attribute this type of benefits directly to participation in the CDP seeing as the latter is only one element of their greater environmental management system and strategy. While they conceded that it was difficult to match savings with specific environmental activities the overall impression was that monetary impacts were mostly prompted by their sustainability reporting and environmental management system. Instead reference companies stressed intangible gains, such as improved relationships with external stakeholders or strengthened brand image. Positive impacts on legal aspects were not mentioned by any of the reference companies. Despite these variations, the findings of this thesis still provide a good overview of what drives companies to join voluntary environmental programmes and how they justify the added costs of participation. Against this background, it is important to note that due to the non-representative nature of the sample of reference companies, the findings cannot be generalised to the whole population of companies responding to the Investor CDP. In addition, contextual aspects such as the political, legal and social frameworks a company operates in may influence what kind of benefits respondents associate with the Investor CDP. For example, this study focuses on companies in Sweden in Denmark which both have a strong track record of progressive environmental policies;

therefore the experience of businesses in other, less environmentally focused countries may differ.

The *second research questions* concerns the case company The Company and questions why it should participate in the Investor CDP. There are several arguments in favour of responding to the CDP information request. First, investors are becoming more and more interested in the environmental performance of companies they hold shares in. The Company is a large corporation listed on the Stockholm Stock Exchange with expanding operations both within and outside Europe. In addition, pressure to become more transparent in terms of greenhouse gas emissions from other external stakeholders, such as environmental NGOs, may increase in the future. Second, The Company markets itself as a cleantech company where sustainability is an integral part of the business strategy to produce "world-class solutions in sustainable energy" (The Company, 2012b, p. 22). The majority of its product portfolio allows customers to reduce their emissions to the atmosphere. Therefore, responding to the Investor CDP may increase the credibility of their environmental strategy and strengthen their green brand image. Third, it could act as a guiding framework to improve internal greenhouse gas emissions reporting as well as the management of climate change related risks and opportunities. Finally, there is the potential to use CDP responses for marketing and PR purposes. All in all, there are several good reasons for The Company to start disclosing their emissions to the Investor CDP. However, as discussed in Ch. 6.2 in the end responsible managerial staff at the case company will have to weigh the costs and benefits as basis for decision-making.

7.2 Recommendations for The Company

The *third research question* "How can the case company implement the Carbon Disclosure Project?" calls for a set of practical recommendations. The findings from the gap analysis suggest that at this point responding to the Investor CDP is already both feasible and to certain extents beneficial for The Company. Below are a few proposals regarding a potential first time response, drawing on the reference companies' experiences with the Investor CDP and information obtained during a CDP workshop:

(a) *Data*: As discussed in Ch. 6.2 data gathered as part of The Company's GRI-based Sustainability Report is adequate for answering the quantitative and some qualitative sections of the CDP questionnaire and should therefore be used.

(b) *Data and strategy gaps*: A general advice regarding the lack of information or management elements (e.g. emission reduction targets) is to not leave these questions blank but to provide explanations as to why they are not (yet) available or established. Not answering will result in zero scores whereas providing plausible justifications may lead to at least partial scores based on the scoring methodology (CDP, 2013g). This is of particular relevance, as according to responsible management the case company is in the process of adjusting its environmental strategy to better incorporate climate change over the next few years (Contact A and B, personal communication, May 13, 2013). In addition, The Company should consider adopting a life cycle perspective with regard to the greenhouse gas emissions linked to their products in order to demonstrate their positive impacts on reducing emissions.

(c) *Assistance*: The Company should make use of the extensive support and guidance the CDP offers to participating companies and in particular first-time respondents. In addition, if time permits reviewing responses from (1) competitors or companies in a similar position, and/ or (2) companies on the CDLI and CPLI may be helpful to become familiar with the set-up and answer formats of the questionnaire.

(d) *Internal support*: Seeking high-level support for participation in the CDP to be able to devote adequate resources to answering the questionnaire is necessary if The Company should come to the conclusion that it disclosing their emissions to the CDP is of importance.

(e) *Scoring*: Some companies perceive receiving low scores as an obstacle to participation. While it is true that most first-respondents that do not involve specialised consultancies achieve comparatively low disclosure and performance scores (based on a review of previous scores of the eleven reference companies) the majority of companies are able to increase their scores over time.

7.3 Future Research

Initially, one of the objectives of this thesis was to research the relationship between voluntary environmental programmes and cleantech companies. Due to limitations concerning the gathering of primary data – there was only one company providing clean technology products in the sample of Swedish and Danish CDP respondents which unfortunately was unavailable for an interview – the question of potential differences between the two types of companies could not be answered. Still, some of the findings from the reference companies and The Company allow for a few broad propositions on the subject to be developed. While the data offers no information on potential causal links regarding cleantech companies and the benefits they may derive from participation in VEPs, the analysis of The Company showed that these companies may be in a better position compared to non-cleantech businesses when it comes to marketing and engagement with external environmentally interested stakeholders. Joining a VEP, such as the CDP, may help corporations in the cleantech sector to strengthen their position as an environmental company and increase their integrity and credibility just as much as for other companies. At the same time, one could also argue that gaining goodwill of external stakeholders through affiliation with a green club is less necessary for these companies, seeing as the former often use green clubs to protect their reputation and brand image from attacks targeted at, for example, questionable environmental practices. Therefore, it is suggested to further investigate this issue based on a larger, representative sample of cleantech corporations. In addition, it could be interesting to study and compare corporations in different countries to assess if and how the geographical, socio-economic, and political context influences the role VEPs play. Scandinavian countries, such as Sweden and Denmark, have a long tradition of strong environmental policies. In countries where environmental concerns feature less prominently on the public and political agenda companies may evaluate the significance of VEPs, such as the CDP, differently.

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Appendix 1 – List of eligible companies from the 2012 Nordic 260 Climate Change Report

Country	Name	Sector	Cleantech vs. non-cleantech	Disclosure score 2012	Performance score 2012	Emission reduction targets	First CDP response
Sweden	Atlas Copco	Industrials	non-cleantech	76	D	absolute target; intensity target	2007
Sweden	Axfood	Consumer Staples	non-cleantech	62	D	absolute target; intensity target	2007
Denmark	Bang & Olufsen	Information Technology	non-cleantech	67	D	intensity target	2008
Sweden	Boliden Group	Materials	non-cleantech	85	B	absolute target	2007
Denmark	Carlsberg Breweries	Consumer Staples	non-cleantech	69	C	intensity target	2007
Sweden	Clas Ohlson	Consumer Discretionary	non-cleantech	70	E	intensity target	2008
Denmark	Coloplast	Health Care	non-cleantech	72	C	intensity target	2007
Denmark	D/S NORDEN	Industrials	non-cleantech	90	B	absolute target	2008
Sweden	Electrolux	Consumer Discretionary	non-cleantech	86	B	absolute target	2007
Sweden	Elekta	Health Care	non-cleantech	78	B	intensity target	2007
Sweden	Ericsson	Information Technology	non-cleantech	74	C	intensity target	2006
Sweden	Getinge	Health Care	non-cleantech	68	C	intensity target	2007
Sweden	H&M	Consumer Discretionary	non-cleantech	61	D	intensity target	2006
Sweden	Hakon Invest	Consumer Staples	non-cleantech	83	C	absolute target	2008
Sweden	Hexpol	Consumer Discretionary	non-cleantech	51	E	-	2010
Sweden	Holmen	Materials	non-cleantech	91	A	absolute target	2007

Sweden	Industrivärden	Financials	non-cleantech	66	E	-	2007
Sweden	Investment AB Kinnevik	Financials	non-cleantech	58	D	intensity target	2007
Sweden	Investor	Financials	non-cleantech	79	C	-	2008
Sweden	JM	Industrials	non-cleantech	78	B	absolute target	2008
Sweden	Kungsleden	Financial	non-cleantech	74	D	intensity target	2008
Sweden	Lindab	Industrials	non-cleantech	67	C	intensity target	2008
Denmark	Lundbeck	Health Care	non-cleantech	78	D	absolute target	2007
Sweden	Lundin Petroleum	Energy	non-cleantech	72	D	-	2009
Sweden	Medea	Health Care	non-cleantech	73	C	intensity target	2008
Sweden	Millicom International Cellular	Telecommunication	non-cleantech	68	D	intensity target	2010
Sweden	Modern Times Group MTG	Consumer Discretionary	non-cleantech	81	B	intensity target	2010
Sweden	NCC	Industrials	non-cleantech	78	C	absolute target	2007
Denmark	NKT Holding	Industrials	non-cleantech	67	D	intensity target	2008
Sweden	Nobia	Consumer Discretionary	non-cleantech	66	D	-	2009
Sweden	Nordea Bank	Financials	non-cleantech	91	B	intensity target	2008
Denmark	Novo Nordisk	Health Care	non-cleantech	90	B	absolute target	2003
Denmark	Novozymes	Materials	non-cleantech	94	B	absolute target; intensity target	2007
Sweden	Oriflame Cosmetics	Consumer Staples	non-cleantech	68	C	intensity target	2007
Sweden	Peab	Industrials	non-cleantech	81	C	-	2009
Denmark	Rockwool International	Industrials	non-cleantech	93	B	intensity target	2009
Sweden	SAAB	Industrials	non-cleantech	92	B	intensity target	2007
Sweden	Sandvik	Industrials	non-cleantech	57	E	intensity target	2007

Sweden	SAS	Industrials	non-cleantech	69	D	absolute target; intensity target	2007
Sweden	Scania	Industrials	non-cleantech	83	C	-	2007
Sweden	SEB	Financials	non-cleantech	80	B	absolute target	2007
Sweden	Securitas	Industrials	non-cleantech	77	D	intensity target	2011
Sweden	Skanska	Industrials	non-cleantech	82	C	-	2007
Sweden	SKF	Industrials	non-cleantech	79	B	absolute target; intensity target	2007
Denmark	Solar AS	Industrials	non-cleantech	59	E	-	2011
Sweden	Swedbank	Financials	non-cleantech	77	C	absolute target	2007
Sweden	Swedish Match	Consumer Staples	non-cleantech	63	E	-	2007
Denmark	TDC	Telecommunication	non-cleantech	65	C	absolute target	2007
Sweden	TeliaSonera	Telecommunication	non-cleantech	69	D	intensity target	2006
Denmark	Topdanmark	Financials	non-cleantech	65	C	absolute target	2009
Sweden	Trelleborg	Industrials	non-cleantech	74	C	intensity target	2007
Denmark	Tryg	Financials	non-cleantech	82	B	absolute target	2007
Denmark	Vestas Wind Systems	Industrials	cleantech	78	C	intensity target	2007
Sweden	Wihlborgs Fastigheter	Financials	non-cleantech	68	D	absolute target	2007
Denmark	William Demant Holding	Health Care	non-cleantech	55	E	-	2009

Appendix 2 – Questionnaire for reference companies

Part A – General information

(1) Please describe you company briefly – what do you produce?

(2) What is your role in the organisation?

(3) Can you please tell me about environmental management at your organisation? What programmes and initiatives do you participate in (e.g. ISO 14001, GRI, Global Compact etc.)?

Part B – Carbon Disclosure Project

(4) Can you please tell me since when you have been reporting to the Carbon Disclosure Project?

(5) Can you please tell me why your company decided to join the CDP?

(6) How much information did you disclose in 2012 (i.e. did you answer the full questionnaire)? Did the level of disclosure change over the years since you first participated?

(7) Is your data publicly available or restricted to certain target groups? Did that change over the years?

(8) How much time do you spend on average on answering the CDP questionnaire? How many people are working on CDP reporting?

(9) Do you involve consultants to assist you in reporting?

(10) How do you gather information for disclosure? Do you use data that is already gathered or has joining the CDP led to changes in your internal environmental reporting system? If yes what has changed?

(11) What do you think about the CDP scoring system?

(12) Are you aiming to increase your disclosure and performance scores every year?

(13) What do you like about the CDP?

(14) Do you see any tangible effects that participating in the CDP has had for your company?

(15) Do you think participating in the CDP is beneficial for your company? If yes how so?

(16) Is there something that you dislike about the CDP or something that you would like to change?

(17) Has your company ever thought about quitting the CDP?

Appendix 3 – List of interviews with representatives of The Company

Name	Position	Form of Communication	Date of Interview
Contact A	Sustainability Manager	In person	13.03.2013
		Telephone	16.04.2013
		Email	17.04.2013
		Email	29.04.2013
Contact B	Quality and Environmental Manager	In person	13.03.2013
		Email	25.04.2013
		Email	06.05.2013
Contact A and B		Email	06.05.2013
		Telephone	13.05.2013