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**The influence of corporate carbon disclosure on investor decisions and attitudes in South  
Africa**

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## Abstract

The purpose of this paper is to investigate and explore the influence that corporate carbon disclosure has on investor decision-making and associated attitudes. The researcher conducted semi-structured interviews with individual investors and institutional investors and fund managers operating in the South African environment in order to gain appropriate insights about their attitudes towards the place of carbon disclosure in the investment analyses. Additionally, semi-structured interviews were held with three prominent petroleum companies operating in the oil and gas industry in South Africa. The results of the research were categorised into four themes that emerged upon analysis of the research findings, namely: the evolution of commercial thinking in terms of carbon emissions and carbon disclosure; the relevance of disclosing carbon emissions and disclosure practices; the association of risk, sustainability and liquidity and investor time horizons; and the emerging market of socially-responsible investors. The researcher found that there is a positive impact on investor attitudes with regard to their investment decision-making as a result of the carbon disclosure of companies.

## Keywords

Carbon Disclosure

Investment

Decisions

Attitudes

Sustainability

## Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Marc Brett Elias

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10 November 2010

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## Chapter 1 - Introduction to Research Problem

### 1.1 Research Title

The influence of corporate carbon disclosure on investor decisions and attitudes in South Africa

### 1.2 Climate Change and Carbon Emissions

Climate Change refers to weather and climate patterns that are becoming more and more unpredictable, some years actually recorded as cooler than others; although the trend is warming at a rate we have not seen before (Kessel, 1999). Some of the effects are that some regions will become drier and others wetter, and more extreme weather-related events are predicted such as tornados, hurricanes, flooding and droughts (Kessel, 1999). These are climatic disruptions caused by anthropogenic emissions, and it is limiting to describe these only in terms of "*global warming*" (Kessel, 1999). In essence, climate change has a negative effect on our social welfare.

Carbon emissions refer to excess emission releases of carbon dioxide into the air (<http://www.thecarbonaccount.com>). The problem is that this systematic carbon dioxide release by mankind and re-absorption has worked for thousands of years in relative balance (<http://www.thecarbonaccount.com>). However, the effect of humans' irresponsible emission activities, including the burning of fossil fuels in general production, has caused excess natural gases to be re-released into the atmosphere, which has made it too difficult for the flora to absorb (<http://www.thecarbonaccount.com>). This carbon dioxide escapes the earth's atmosphere, contributing to the temperature fluctuations

associated with climate change, which are proving detrimental to the climate and well-being of the sustainability of the planet (<http://www.thecarbonaccount.com>).

Civil society's practical focus on climate change is on carbon dioxide emissions as emissions are the major cause of climate change and this is also where man is significantly responsible, through, amongst other things, the additional burning of fossil fuels. Scientific studies and forecasts in the growth and accumulation of projected carbon dioxide emissions up to the year 2100 have been conducted based on current deployment quantities of carbon dioxide emissions (IPCC, 2007); in other words, this constitutes the "Business as Usual" scenario. This scenario forms the base of what is known as the IS92 - a scenario, which is essentially a predictive model that excludes the potential establishment of appropriate interventionist-type policies (IPCC, 2007). The predictions of these studies indicate significant upward increases in carbon dioxide emissions increasing over time using the global populations' current deployment as a base setting (IPCC, 2007). It should be noted that the extent of the predicted temperature rise differs; but there is, for the most part, consensus in this field of science that temperatures will indeed rise (IPCC, 2007). The scenario holds current business norms constant in the predictions presented in the final results (IPCC, 2007). In this regard, Kessel (1999) argues that climate change sceptics do not suggest that the phenomenon does not exist - *"even if we cannot detect a significant trend of anthropologic global warming now, it is probable that it will become visible some day if we go on with business as usual"* (Kessel, 1999, p. 165).

The consequences of climate change are affecting and will continue to affect the South African and international community.



### 1.3 Research Problem

On an international level, the business community is growing more aware of climate change, carbon emissions and their linkages with the commercial economy. However, it is not clear if the South African business community is at the same stage of awareness or if the climate change forecasts have had an impact on business decision-making locally. That is not to say that South African companies are disconnected from the issues surrounding climate change; but rather, that general stakeholder preferences in South Africa have not yet evolved to take climate change into account, and that climate change has not been given as much weight in decision-making when compared to other countries (Tankha, 1999). It should be noted, however, that climate change and carbon dioxide emissions are a growing concern in the psyche of South African companies, in line with international trends of awareness (<http://www.cdproject.net>).

Additionally, various carbon disclosure initiatives have been established to enhance carbon accountability and improve transparency in this regard to investors. One of these initiatives, the Carbon Disclosure Project (CDP) (discussed further in Chapter 2), suggests through its annual reports that investors are the primary beneficiaries of carbon-associated organisational strategies (<http://www.cdproject.net>). The Global Reporting Initiative (GRI) assists companies in developing sustainability reports which cover the disclosure and effect of carbon emissions (Antoni and Hurt, 2006). Additionally, certain market indices have been established to track disclosure, such as the Social Responsibility Index (SRI) located on the Johannesburg Stock Exchange (JSE) (<http://www.jse.co.za>). These indices are also governed by the inputs of governance regulations that have been developed by civil society, enforcing strict listing requirements that urge companies to consider their

operational, reporting and communication practices in favour of climate change and associated issues.

While subscribing companies' carbon emissions are presented in the CDP, the CDP develops an annual report presenting carbon details for the interest of investors, which will be covered in great detail in Chapter 2 (Kolk *et al.*, 2008). In addition to the CDP, INCR and associated programs, calls for change have been identified in South Africa's soon to be effected 2008 Companies Act, where it records that "*the business and affairs of a company must be managed by or under the direction of its board of directors*" (Section 66(1), Companies Act, 2008). This is considered to be a significant restatement of the general authorising provision provided in the 1973 Companies Act. This prescribes that a board of directors may be held financially accountable on a personal basis for any attributable misdoings as may be identified in the competitive landscape. The wrongful acts or omissions that are relevant to this thesis paper are those corporate activities that have an environmental impact. The new Act and its regulations may require the establishment and proper execution of a Social and Ethics committee, which includes the obligation to focus on the environment as well as the monitoring of the various latent impacts, and the influences of goods and services provided by the company (Section 72(4), Companies Act, 2008).

The King III Report compliments these provisions of the Act, and calls for accountability for poor practice with regard to social and environmental issues. The Act and its regulations require the establishment of an integrated report in which companies are obliged to convey sufficient information detailing the positive and negative effects on the economic

life of the community during the year under review. These details are categorised as environmental, social and governance issues (ESG) (King, 2009). The Johannesburg Stock Exchange (JSE) prescribes statements of adoption of King III principles as part of its listing requirements (<http://www.jse.co.za>). These requirements compel South African listed companies to “apply or explain” adherence to the corporate governance code (King, 2009). Application or explanation as to why the King III Report has not been applied is expected to be disclosed in annual reports (<http://www.jse.co.za>).

The key source relied upon by investors in making investment decisions is the financial statements or annual reports of companies. Companies’ annual reports include both financial and non-financial elements, which should cover social, environmental, governance and economic issues. These elements should be included on the basis that they are viewed as material in determining overall sustainability, and thereby importantly, investment decisions. On this basis, it could be said that there is a growing convergence with these financial and non-financial elements, in that climate change has an impact on significant aspects of business, especially in the concept of a going concern.

This is central to the King III Report. The additional, progressive governance principles outlined in the King III Report should enhance the knowledge and awareness of investors with regard to the importance of sustainability issues and general disclosure (King, 2009).

Of further interest to investors is a draft institutional shareholder code for responsible investing, published by the South African Institute of Directors. It is aimed at encouraging fund managers to disclose their voting records (Bonorchis, 2010). The draft Institutional

Investor Code appears to go further than the “apply or explain” initiative of the King III Report (Crotty, 2010). The general belief is that the word “apply” in this context is seen as ambiguous, and investors should be told to what extent a principle is applied, rather than the simple statement. The aim of this newly drafted investor code is to allocate accountability to shareholders including institutional investors, and not just directors (Crotty, 2010).

Environmental activities and performance measures should be included in the general strategy presented by directors as all material risks are required to be considered and included in the annual reports of companies (King, 2009)(Buysse and Verbeke, 2003). The King II Report suggested that committees execute certain duties with the objective of satisfying legislative and regulatory requirements as set by government or governance regulations (Crotty, 2010). However, a new trend of improved governance and environmental concern appears to be emerging, which effectively promotes investor satisfaction in addition to the legislative and regulative advancements.

For example, from an investor’s perspective, there is specific information that may arouse interest and confidence, such as current and future use of natural resources, including water. This information has become so important that some of the world’s biggest companies and mutual funds have voluntarily altered their operational and communication strategies in order to satisfy these changing information requirements (Berridge and Cook, 2009).

With specific reference to climate change, there has been a favourable shift in mutual fund support for shareholder resolutions that deal with climate change (Berridge and Cook, 2009), given the negative social impact that climate change may have on social welfare, which renders the issue “material”. One may deduce that the companies that alter their strategies in favour of climate change acknowledge that their stakeholders may be interested in trends such as carbon disclosure and environmental initiatives, which are complimentary to financial performance and which influence overall company performance and value.

It is imperative for South African companies to know what drives investor decision-making. Aligning company values to those of investors is in every company’s interest. However, little research has been conducted in the South African context to analyse the decision-making relationship between investors and their respective investments with regard to climate change influences and related initiatives, which would assess the value of carbon emissions in the investment decision-making process.

This paper seeks to determine whether or not the South African investor community is influenced by carbon disclosure, whether carbon disclosure as an indicator of a company’s sustainability considerations evidences value in the company in the eyes of investors, as well as whether or not companies are influenced to disclose carbon-related information as a result of investor pressure.

## Chapter 2 - Literature Review

Chapter 1 of this paper presented a brief background with regard to the need for appropriate company responses to climate change, specifically through disclosing carbon-associated activities. In this chapter, the writer makes use of relevant theory and journal entries to support the argument presented in Chapter 1.

The theoretical argument is based on sustainability and carbon disclosure concepts, as well as the business case for properly adapting reporting strategies to attract additional investors.

### 2.1 An introduction to Responsible Investment

The most accepted definition of sustainability is found in the Brundtland 1987 Report of the World Commission on Environment and Development. It states that sustainability refers to *“the paths of progress which meet the needs and aspirations of the present generation without compromising the ability of the future generations to meet their needs”* (Brundtland, p. 5, 1987).

The sustainability measures that are taken by companies to minimise material risks and reduce carbon emissions are disclosed in all communication channels that companies utilise, including annual reports and company websites (Rosenberg, 2009). These carbon mitigation measures are said to be either resource based, or non-resource based with regard to the investments required to implement appropriate carbon reduction strategies (Buysse and Verbeke, 2003). Rosenberg (2009) explains how this communication impacts on investor decision-making. He notes that small changes in corporate operations

regarding water and energy conservation and recycling programmes are increasingly being presented in the annual reports of public companies, and are said to be factors contributing to the attraction and retention of investors (Rosenberg, (2009).

However, these carbon mitigation measures may have an effect on company value and income statement performance (Buysse and Verbeke, 2003). Changing a carbon emissions strategy may have a paradoxical effect on a company in that it may have negative and positive influence on a company's financial position (Tankha, 1999). The reason for this is that these mitigation measures may negatively influence net profit in the short term, which may cause investor detraction (Tankha, 1999). To illustrate, economic growth without a forward-looking sustainability strategy has traditionally been focused on high carbon emissions activities such as mining, heavy industry and manufacture. For these industries, lowering pollutants and mitigating negative environmental impacts frequently involves substantial initial investment and a sacrifice in short-term profits (Epstein, 2008). The drivers of unsustainable growth and industry factors, including increased populations, industrialisation and mass production, have determined advanced and fragmented stakeholder preferences in light of the additional market populations, and form the basis for considering sustainable proactive investments (Tankha, 1999). This observed trend seems to exist in newly developed and developing countries with high growth potential (Tankha, 1999). Countries in both the developed and developing world are prone to emitting unnecessarily high amounts of carbon dioxide in their quests for super-normal economic growth through mass manufacturing and industrialisation processes (Tankha, 1999). Only once this growth is achieved, companies seem to become more open to

carbon dioxide salvage investments, with the goal of minimising their carbon impacts (Tankha, 1999).

In summary, the trend today is that governments, big business and the community have identified the need to develop more sustainable industries, business practices and environments. They do, however, recognise that this will be a costly exercise should they embark on significant change, but that it will be even more costly in the long-term should this change in strategy and implementation be delayed. The world seems to be aligning itself, at least in its aspirations, with sustainability as described by Brundtland (1987).

However, the above-mentioned sustainability and carbon reduction aspirations often grind to a relative halt, given the organisation decision trade-off between short-term profits and long-term sustainability (Berridge and Cook, 2009). This is due to the need to attract additional reserves to fund these long-term investments (Berridge and Cook, 2009). The investments required to fund sustainability strategies are considered with the goal of contributing to sustainable growth and investment performance in mind (Berridge and Cook, 2009). If companies are expected to sacrifice short-term profits in order to invest in resources that favour their long-term sustainability, they may struggle to attract investors (Walker, 2008). The seeming difficulties in attracting investment, according to Walker (2008) has often persuaded companies not to disclose the full extent of material risks, which has caused more harm such as unsafe occupational and living environments. These circumstances have encouraged the codification and legislation of higher compliance standards, such as environmental regulation and those described in Chapter 1 (King, 2009)(Companies Act)(Crotty, 2010) (Bonorchis, 2010).



As an indirect result of better corporate governance and more comprehensive disclosure, shareholder activism is now playing a pivotal role in increasing the pace and impact of sustainability transformation within companies, especially with regard to climate change and specifically carbon emissions (Berridge and Cook, 2009). This transformation toward more sustainable practices has altered the decision-making processes of investors, who have additionally demanded greater disclosure of material issues associated with carbon emissions (Walker, 2008). The tendency towards more transparent practices and subsequent communication of carbon-related activities contributes to the development of a sustainable competitive advantage as well as the building of a future market position (Buysse and Verbeke, 2003)(Verbeke, Sellers and Bowen, 2009).

As a result, fund boards' support for climate change-related shareholder resolutions is higher than ever (Berridge and Cook, 2009). However, this increase is not only due to the preferences of shareholders, but also due to the enhanced governance codes and guidelines of market indexes by the SEC in the United States and the JSE in South Africa (Bonorchis, 2010)(Berridge and Cook, 2009). The future sustainability of some of the oldest and largest mutual funds has become threatened by the emergence of advanced shareholder activism (Berridge and Cook, 2009). As a result, the managers of these mutual funds have altered their behaviour in the trading of investments, tending to invest in instruments that are sustainable (Berridge and Cook, 2009).

Trading behaviour will always have an impact on share prices (Kolk *et al.*, 2008). Company share prices are primarily determined by market demand. This means that a share that is tradable in the future may carry additional value, thereby contributing positively to current

share value. It is therefore most appropriate for institutional investors particularly, who invest with stable long-term returns in mind, to consider sustainability heavily in their investment decisions (Berridge and Cook, 2009). In this way they also become more socially responsible in their investment impact on the economy and the future community (Berridge and Cook, 2009).

However, this is not to say that all shareholder resolutions in favour of climate disclosure are all being accepted (Berridge and Cook, 2009). Favourable resolutions in the United States of America dealing with climate risk peaked at a 26.3 percent acceptance rate in 2008, up from a 14.7 percent acceptance rate in 2007 (Berridge and Cook, 2009). One possible reason for the seemingly low support is that company directors and mutual fund trustees may view climate risk as a soft social and environmental issue, which does not warrant support and also may require drastic changes in investment portfolios to achieve carbon neutral positions (Berridge and Cook, 2009). They appear to fail to recognize that “climate change meets all three thresholds – it is a profoundly important social, environmental and financial issue” (Berridge and Cook, P. 4, 2009).

With regard to the South African context, the 2009 Carbon Disclosure Report detailed significant increases in South African companies participating and responding to the CDP (<http://www.cdproject.net>). The report for South Africa detailed a 10 percent increase in South African companies that responded to the CDP from 2008 to 2009. The 2009 CDP (South Africa) report researched a sample of 100 companies that are listed in the Johannesburg Stock Exchange (JSE) across an array of commercial sectors including: Consumer, Energy, Financials, Health Care, Industrials, IT (Information Technology)

Telecommunications and Materials. Of the 100 sample listed companies, 68 had in fact responded to the CDP: “there is generally high awareness amongst the responding companies of the opportunities related to CDM (Clean Development Mechanism) activities” (CDP Report on South Africa, <http://www.cdproject.net>, p 58, 2009).

There is no question that the mindsets of both individuals and companies are changing in the favour of environmentally sensitive activities, practices and experiences. Initiatives such as the Carbon Disclosure Project (CDP), Global Reporting Initiative (GRI) and the Investor Network on Climate Change Risk (INCR) have attracted companies’ membership as companies seem to desire to portray proactive ratification of the issues surrounding climate change (<http://www.cdproject.net>). Consequently, companies send positive signals to the market resulting in additional investment (Berridge and Cook, 2009) (Walker, 2008).

Bader (2006) and Rosenberg (2009) explain how these business practices, if considered and enacted properly, will generate the future success, in line with the long-term objectives of any organisation. These future successes refer to the translation of improved business practices into revenue and shareholder attraction (Rosenberg, 2009). This is made possible through the reduction in operating expenses (and increased revenue through customer demand) through efficient and well-established environmental strategies, such as those resource-based stakeholder strategies outlined by Hart (1995) and Buysse and Verbeke, (2003). Such strategies would include investing in green products and manufacturing processes, and external environmental reporting (Buysse and Verbeke, 2003).The following

section serves as brief theory outlining the evolving actions of businesses and shareholders into those that are more sustainable.

## 2.2 Disclosure

Epstein (2008) outlines the importance of external communication and credibility with regard to the activities of companies in the social and environmental arenas. The apparent advantage of implementing better disclosure is that it results in increased stakeholder satisfaction, which has an influence on investor demand (Epstein, 2008).

Monterio (2010) describes a shift in the interests of institutional investors, where many years ago they were interested in quantitative data only in the reports offered by companies. In the current context, institutional investors value the non-financial data regarding sustainability issues in addition to the financial information (Monterio, 2010). This non-financial information includes environmental, social, and governance (ESG) practices (Monterio 2010). Dubbink, Graafland and Liederke (2008) explain that the level of appropriate disclosure may have an impact of the perceptions of investors (Dubbink, Graafland and Liederke, 2008).

Dubbink, *et al.* (2008) and Beretta and Bozzolan (2008) explain the importance of disclosing only information that is relevant. Any information that is disclosed that is not relevant may detract from the overall company and share value (Banghøj, Plenborg, 2000) (Beretta and Bozzolan, 2008). Bansal and Clelland (2004) associate the disclosure of relevant (and desirable) information with the gaining of perceived legitimacy (Bansal and Clelland, 2004).

With regard to the disclosure of carbon emissions, Bansal and Clelland refer to it as environmental legitimacy (Bansal and Clelland, 2004).

Bansal and Clelland (2004) investigate the impact of environmental legitimacy on stock market risk. They define environmental legitimacy as *“the generalized perception or assumption that a firm’s corporate environmental performance is desirable, proper, or appropriate”* (Bansal and Clelland, 2004). They explain that the conveying of positive environmental communication to the market in isolation mitigates an element of risk, despite the actualities regarding the company’s internal practices (Bansal and Clelland, 2004). Such positive environmental communication could take the form of press releases that are aimed at enhancing the public’s belief in a company’s *“commitment to the environment”* (Bansal and Clelland, p. 101, 2004). This form of external communication has been dubbed *“green-washing”* which refers to an external communication that is found to be false regarding the environmental impact of an action or set of actions (Bansal and Clelland, p. 101, 2004). However, organisations adopting this strategy run the risk of *“protesting aggressively”*, causing stockholders to discount the legitimate practices that are said to be employed, causing the company to be seen as a illegitimate fabricator of true practices (Ashforth and Gibbs, 1990). This detracts from a company’s reputational advancements gained through their initial environmentally legitimate reputation (Ashforth and Gibbs, 1990). This newly detracted legitimacy has been said to destroy value (Ashforth and Gibbs, 1990). Aldrich and Fiol (1994) and Bansal and Clelland (2004) explain that a company that communicates environmental legitimacy truthfully in terms of its core competencies is likely to endure high value returns in the future.

## 2.2.1 Types of Disclosure

### 2.2.1.1 Full Disclosure

Full disclosure, according to Kaufmann *et al.* (1994) and Dubbink, Graafland, van Liedekerke (2008), refers to a company communicating all relevant information honestly and timeously, including in times of catastrophic crisis. Kaufmann *et al.* (1994) finds that there is a positive relationship between full disclosure policies and long-term investor confidence. The main reason for this relationship is that it prepares companies adequately for the long-term effects of a potential crisis (Kaufmann *et al.*, 1994).

Additionally, as determined by Lundolm and Van Winkle (2006), companies may achieve reputational enhancement through the full disclosure of negative events, as investors see value and legitimacy in the disclosure (Lundolm and Winkle, 2006). Furthermore, companies may “*avoid being thought of as having the worst possible news*” through full disclosure in the eyes of investors (Lundolm and Winkle, p. 44, 2006).

According to Kaufmann, Kesner and Hazen (1994), investors pay closest attention to company disclosure in times of crisis. Given the vulnerability of sustainability in difficult times, companies are reluctant to disclose all relevant details to the public as it may hurt the share price (or other indicators) (Kaufmann *et al.*, 1994). At the same time, investors are cognizant of issues surrounding specific industries in times of crisis, and are therefore seeking additional communication (Kaufmann *et al.*, 1994).

Full disclosure does not, however, come without potential long-term risks (Kaufmann *et al.*, 1994), such as the negative perceptions that follow operational catastrophes. An example

of this type of catastrophe is the case of the “*Deepwater Horizon Oil Spill*” of 2010, which threatened to cripple the sustainability of the particular company under scrutiny (IEDC, p. 37, 2010). The communications that followed the oil spill ousted the company’s alleged negligence, rendering it accountable to the international community and causing such extreme reputational damage that the company is struggling to recover (IEDC, 2010). Kaufmann *et al.* (1994), explains that disclosure is potentially useful in reducing the risks associated with negative exposure.

#### 2.2.1.2 Non-Disclosure

The non-disclosure policy does not mean that a company does not communicate at all with its’ investors (Kaufmann *et al.*, 1994) (Dubbink *et al.*, 2008). Supporters of the policy believe that the ease of stress of not having to effectively communicate in times of crisis allows a company to rectify problems without putting their efforts into the market environment, and managing those risks accordingly (Kaufmann *et al.*, 1994). The underlying assumption of non-disclosure is that, once a given crisis passes, there is no need to communicate any status of the crisis (Kaufmann *et al.*, 1994).

However, Lundolm and Winkle (2006) found that a company is generally “*better off disclosing*” (Lundolm and Winkle, p. 44, 2006). The main reason for this is the nature of a competitive market place, where companies fight for customers and investors to drive the highest possible revenues. (Lundolm and Winkle, 2006). Lundolm and Winkle argue that in the case if two companies, one choosing to disclose relevant information and the other choosing not to, the company that chooses to disclose will gain advantage over the other through additional engagement with stakeholders, resulting in added competitive

advantage (Lundolm and Winkle (2006). However, there is a risk that in times of crisis, the company that does not disclose relevant information may gain market share over the company that chose to fully disclose relevant their information, which brought harm to their reputation in the market place.

### 2.3 Carbon Disclosure

According to Kolk *et al.* (2008) carbon disclosure is a form of civil regulation. Cormier describes carbon disclosure as an integrated type of corporate governance which is backed by civil society, and as such puts businesses under pressure to adopt practices of a new set of environmental and social norms (Cormier, 2005). The concept of carbon disclosure translates into a proposed relationship between share price and climate strategy (Kolk *et al.*, 2008).

It should be noted that carbon disclosure is a sub-disclosure of ESG disclosure activities. It should also be noted that carbon disclosure is not synonymous with carbon accounting (Kolk *et al.*, 1994) (Bebbington and Larrinaga-Gonza, 2008). Carbon disclosure, according to Kolk *et al.* (2008), contains *“information on a wide range of climate-related activities, including measurement of emissions, organizational preparations, technological investments, and trading and offsets”* (Kolk *et al.*, p. 725, 1994); whereas carbon accounting *“is a more precise, formal but narrower activity concerned with quantifying emissions that can be bought and sold, namely traded, in accordance with a particular set of legal standards and limits”* (Kolk *et al.*, Pg. 725, 2008). The latter definition plays a bigger role in the activities surrounding carbon trading systems (Bebbington and Larrinaga-Gonza (2008).



## 2.4 Disclosure Options and Trends

As Super (2010) explains it, “*climate change is no ordinary policy problem. Its regulation certainly is no ordinary policy initiative. No-one should be surprised, therefore, that reaching principled choices about its substantive scope requires more than routine policy analysis*” (Super, Pg. 1093, 2010).

The purpose of carbon disclosure, according to Kolk, Levy and Pinkse (2008) is to convey a company’s efforts and progress as a standardized unit. This is generally well-understood by those investors and other stakeholders that are concerned about such initiatives, in areas related to a company’s climate-related activities. The theoretical result is that companies and investors become more astute about the potential risks and opportunities facing these companies in light of climate change (Kolk *et al.*, 2008). In fact, this is the objective behind the formation of the CDP (<http://www.cdproject.net>).

Given the apparent opportunities that follow disclosing carbon emissions-related activities to the public and simultaneously gaining shareholder confidence and additional investor interest (McFarland, 2009), many companies and institutional investors subscribe to or become signatories to leading carbon disclosure initiatives such as the CDP and INCR (Investor Network on Climate Risk) respectively.

The CDP is a network of companies that disclose their carbon related issues on an annual basis (Kolk *et al.*, 2008). The INCR is a network of institutional investors that identify risks and opportunities with regard to climate change (Kolk *et al.*, 2008). Additionally, it is the mandate of the members of the INCR to identify and tackle policy and governance issues

that are seen to impede investor progress toward more sustainable capital markets (Kolk *et al.*, 2008). The reports documented by the INCR explain how investors are reacting to climate change (Kolk *et al.*, 2008).

The two networks presented above form the most active groups in the carbon disclosure domain. They represent the investor-company relationship, which is vital in the context of this research. Investors are increasingly becoming accountable to each other (Bonorchis, 2010), as are companies to each other and to their investors (Cashore *et al.*, 2004)(Companies Act No.71, 2008)(Ball, 2006).

According to Cashore *et al.* (2004), the progression of the above-mentioned relationship does not directly include government. As a result, there has been an increasing trend of NGOs to target corporations instead of state-led policies. Hence, the standards and guidelines that include disclosure activities are often found in corporate governance guidelines, as in the King III Report (2009) in South Africa. The idea behind this “*non-state driven governance system*” (Cashore *et al.*, Pg. 4, 2004) is to hold corporations accountable to each other, in addition to the government. Also as a result, shareholder activism has more bargaining power than ever before when it comes to changing initiatives within the businesses with which shareholders associate themselves (Berridge and Cook, 2009).

According to Cogan (2006), companies “*no longer question how much it will cost to reduce greenhouse gas emissions, but how much money they can make doing it. Financial markets are starting to reward companies that are moving ahead on climate change, while those*

*lagging behind are being assigned more risk”, and thereby reduced investment attractiveness (Cogan, p.1, 2006).*

## 2.5 Theoretical company profiles and their tendencies in adopting Carbon Disclosure

*“The challenges associated with climate change will require governments, citizens, and firms to work collaboratively to reduce greenhouse gas emissions, a task that requires information on companies’ carbon risks, opportunities, strategies, and emission levels”* say Reid and Toffel (p. 1157, 2009) in their research submission entitled *Responding to Public and Private Politics: Corporate Disclosure of Climate Change Strategies*. The rights of shareholders with regard to disclosure practices are outlined in the Shareholders’ Bill of Rights that is pending qualification in United States Congress (Sweeney, 2010). The content and scope of the proposed bill is quite similar to that of the King III Report with regard to shareholders’ rights against the companies in which they invest (King, 2009).

Despite the description of the importance of necessary change management measures and strategies mentioned above, one should consider the differences in company responses to sustainability concepts in greater detail. Tankha (1999) differentiates companies in terms of the nature of their responses to competitive sustainability as follows:

1. Inactive
2. Reactive
3. Preactive
4. Proactive

In terms of sustainability, inactive companies subscribe to the process of continuing business-as-usual. They are resistant of change and avoid succumbing to the pressures exerted by stakeholders (Tankha, 1999). With regard to carbon disclosure activities, these companies will neither align their activities to stakeholder pressures nor will they take advantage of the potential opportunity of gaining competitive advantage. One may deduce that this will often be the case in private companies with secure supply chains and customer bases.

Reactive companies seem to take action only when pressures are known and are well established. These companies are slow to react to stakeholder demands (Tankha, 1999). Reactive companies will only initiate carbon disclosure activities once the pursuit has become engrained in the ways that organisations operate.

Preactive companies attempt to predict situations and follow this process by initiating activities within the organisations. However, they may be more “passive” in their approach as they often fail to fully deal with the possible exposure and thereby capitalise on the gaps that they fill. This suggests that these companies will not generate any competitive advantage out of their ventures but will however stay in keeping with the industry leaders. These companies will prepare to disclose their carbon activities but will often fail to initiate the practice with the best execution and timing (Tankha, 1999).

Proactive companies, however, are committed to positive activity and go further than preactive firms in that they wilfully and successfully develop competitive advantage and establish future market positions in light of their scenario-planning (Tankha, 1999). These

companies will realise the pressure earlier than their competitors and will timeously execute the disclosure activities well in advance of their competitors, which will ultimately drive the success of the company in the future (Tankha, 1999). These companies take full advantage and either take the known competitive advantage through committing to carbon disclosure or alternatively create competitive advantage through effective communication with their shareholders.

Adger, Arnell and Thompkins (2004) explain that proactive action plans, with regard to adapting to the changing environmental climate, include disclosure of the carbon impacts of operating activities, as well as the additional communication of the anticipated impacts, facts and analysis and the identification of potential opportunities taking these factors into account regarding climate change (Adger *et al.*, 2004).

Unfortunately, however, this effective adaptation is often frowned upon in the commercial environment, given that the issue is often considered to be an intergenerational issue that is not necessarily relevant to the current context (Adger *et al.*, 2004). Nevertheless, the action plans to educate investors, as mentioned above, in addition to carbon disclosure, are said to yield positive transformation of shareholder and investor preferences and thereby ultimately less future financial exposure (Adger *et al.*, 2004).

The researcher will use the above profile theory in assigning appropriate labels to the petroleum companies that have been researched as part of this paper .

The subsequent sections of this chapter include the perspectives of both companies and investors regarding carbon disclosure as well a theoretical analysis of the competitive environment for attracting and retaining investors.

## 2.6 Sustainability Strategies and Carbon Disclosure: a Company Perspective

In order to gain a better understanding of the relevance of the research and subsequent findings of this paper, one should consider what sustainability actually means in the context of the relationship between companies and investors. The Dow Jones Sustainability Index (<http://www.dowjones.com>) defines sustainability and its context as “*a business approach to create long term shareholder value. Sustainability leaders embrace opportunities and manage risks that derive from economic, environmental and social developments. As the importance of these trends increases, a growing number of investors integrate economic, environmental and social criteria into their stock analysis and use sustainability as a proxy indicator for innovative and future-orientated management*” (www.dowjones.com, 2010).

Prahalad and Hamel (1996) explain that that the commercial environment is on the brink of a commercial crossroads (Prahalad and Hamel, 1996). Prahalad and Hamel (1996) explain that the progressive advancements of commerce are determined by enhanced environmental standards, company accountability and disclosure practices (Prahalad and Hamel, 1996). This paper assesses the impacts of these changes, specifically relating to carbon disclosure, with exclusive regard to investors and their long-term investment needs.

Polonsky and Scott (2005) conclude in their research that there is a relationship between strategy and stakeholders, implying that there are specific strategies that could be applied to specific stakeholders. They highlight the importance of effective stakeholder management within companies in order to advance operational performance and achieve competitive advantage (Polonsky and Scott, 2005). Although this paper investigates the relationships with investors alone, this idea is relevant in defining carbon disclosure as a strategy to engage with investors specifically, and in securing their interest in gaining required competitive advantage (Verbeke and Buysse, 2003). The effect is to attract investment funds.

Verbeke and Buysse (2003) explain that the movement towards sustainable and environmentally friendly business practices starts with communication about carbon-emitting activities with investors in order to gain confidence in the market. This principle is highly relevant to high carbon-impact companies.

Amarlic and Hauser (2005) confirm the concerns mentioned above in their paper entitled *Economic Drivers of Corporate Responsibility Activities* where they seek to determine which types of circumstances may yield increased company value as a result of developing and implementing corporate social responsibility activities. They explain how reputation risk management is of vital importance in developing and adapting new strategies and strategic interaction in tandem with government regulation. They also explain that companies may use corporate responsibility activities to create and maintain differentiation in the market, which implies that there is significant focus on developing competitive advantage and a future market position through responsible activities and environmental strategies (Amarlic

and Hauser, 2005). However, with regard to carbon disclosure strategies, they deduce that corporate responsibility activities may not yield this advantage in terms of product differentiation but may rather result in satisfaction of stakeholders' expectations (Amarlic and Hauser, 2005). These expectations include the disclosure of the impact on the socio-economic environment (Amarlic and Hauser, 2005). The mitigation and prevention of risk is proactive, in the general sense, and vital in developing this future market position and competitive advantage through enhanced responsibility (Amarlic and Hauser, 2005) (Hart, 1995) (Buysse and Verbeke, 2003) (Verbeke *et al.*, 2009).

It should be noted that the research of Amarlic and Hauser (2005) finds that corporate responsibility activity portfolios have increased over the past ten years. They explain that this increase was driven by the changes in stakeholder expectations and the prospective regulatory changes expected to be enacted in the not so distant and more distant futures (Amarlic and Hauser, 2005).

In addition to corporate social responsibility influences and considerations, *"investors are recognising that there is a strong, growing correlation between industrial companies' environmental performance and their competitiveness and financial performance"* (Debono, p.80, 2005,). The reason for this is that adherence to regulatory practices and customer demand requirements may significantly decrease the risk profile of shares, making them more attractive, safer investments in the market place (Debono, 2005). This outlines the general incentive for companies to respond proactively and publically with regard to the demands that may follow carbon emissions, which form a significant consideration in a company's overall environmental footprint. It will be interesting to see



whether or not this will be embraced within the South African context, and whether or not investors are aware of the apparent correlation.

## **2.7 Sustainability Strategies and Carbon Disclosure: an Investor's Perspective**

From an investor's perspective, Vander (2004) explains that investors need to invest in factors other than capital appreciation. This implies that there are many other factors to consider in long-term investing. She also explains that sustainability concepts need to be considered as key drivers of investor decision-making (Vander, 2004). She stresses the distinction between long-term and short-term investors and their respective investments, and the accepted economy fluctuations that arise with the nature of the investments (Vander, 2004). These factors need to be considered in assessing an investment's ability to continue to appreciate sustainably in the future during trough and boom periods, thereby prospering continually into successive business cycles (Vander, 2004). In this paper, this point should be considered in the context of petroleum companies in terms of the limited amount of oil, process innovation and sustainable strategies including carbon disclosure and environmental activities.

Wildsmith (2008) finds that there is a seemingly positive shift toward long-term investment strategies, despite the scepticism that surrounds the social constraints of climate change. However, she identified a flaw in current long-term investment strategies through the research of South African pension funds: this long-term strategy proved to be somewhat paradoxical in that long-term investment strategic management is being widely influenced by the general and trading preferences of short-term stakeholders (Wildsmith, 2008). This, according to Wildsmith (2008), is putting a halt on the ability of companies to achieve true

corporate sustainability, as the nature of the market place is conflicting due to the varying demands of investors (Wildsmith, 2008). She also finds that her sample, including a mixed group of professionals in a range of industries, felt that much more susceptible to the idea that shareholder activism may play an increasingly vital role in the future, especially in relation to environmental impacts of companies (Wildsmith, 2008).

The theory presented above, extracting important information regarding investor time horizons, is related to shareholder activism. Activists perceive the efforts of companies to be focussed on satisfying short-term investors, rather than the long-term investors in ensuring long-term sustainability through the implementation of associated sustainability measures (Berridge and Cook, 2009).

Social Movement Theory explains that activists lobbying to gather support regarding a particular topic may enhance the development of new types of norms in public listed companies, including operations, reporting and disclosure practices according to Della Porta and Diani's book entitled *Social Movements: An Introduction* (2006), cited by Reid and Toffel (2009). Briscoe and Safford (2008) suggest that this concept may apply to private companies in addition to public listed companies. Social movement theory is closely associated to shareholder activism (Reid and Toffel, 2009).

According to Reid and Toffel (2009), the role of a shareholder activism is initiated to challenge the legitimacy of organisations with regard to moral principles, and to influence companies (Reid and Toffel, 2009). They propose that activism may influence a targeted challenged company in its strategic practices and business operations, but may also have

an effect on non-targeted companies within the institutional field as they may start to reconsider their own frameworks, often due to the threat of legislative consequences (Reid and Toffel, 2009). In this way, activism relating to climate change response activities may influence new directives of organisations in their quests for long-term sustainability and competitive advantage, which is in line with the findings of Hart (1995) and Buysse and Verbeke (2003)

Reid and Toffel (2009) explore the responses of companies towards shareholder activism, which is often influenced by NGO activism and focuses on the encouragement of responding through accurate disclosure of all activities concerned with climate change. Companies are promoted to join networks such as the United Nations Global Compact (Reid and Toffel, 2009). Such networks encourage the alignment of business practices with specific forms of governance, social and environmental types of initiatives and principles in developing core value systems and corporate strategies. Member companies are required to publically submit their progress through accurate and appropriate reporting as well as through the inclusion of exception reporting (Reid and Toffel, 2009). Upon submission of sustainable and transparent reporting and practices, competitive advantage may be achieved as a result of a rise in shareholder interest and subsequent product demand and acceptability (Buysse and Verbeke, 2003).

In developing the theory stated above, Reid and Toffel (2009) focused their paper on the Carbon Disclosure Project (CDP), and the number of organisations subscribing to the association. In 2006 and 2007, 44% of the companies on the S and P 500 Index had responded by means of this project. This is proof that there is an increasing trend to

disclose the relevant information with regard to social initiatives as needed in the circumstances. It also demonstrates, given that these companies are in the public spotlight, and that companies may achieve an increased market share that they might not have had, had they not positively and actively associated themselves with the initiative.

While Reid and Toffel (2009) focused their paper on the Carbon Disclosure Project (CDP), which may be seen as a subscription network of association, McFarland (2009, p. 299) offers greater detail as to the strict reporting standards that had been formulated by “*thousands of experts*” that “*has pioneered the development of the world’s most widely used reporting framework*”, called the Global Reporting Initiative (GRI). The GRI is made up of guidelines and social reporting standards (Antoni and Hurt, 2006). The environmental section of the GRI is devised through various categories including biodiversity and energy and emissions. McFarland’s journal entry (2009) entitled *Warming up to Climate Change Risk Disclosure* triangulates the findings of Reid and Toffel (2009) in submitting that less than half of the companies on the Standard & Poor’s 500 have their responses disclosed to the public on the CDP’s website.

However, these requirements were not enforced by government, but rather through civil society and its subsequent threats of revised and new regulation and legislation (Kolk *et al.*, 2008). Often, new corporate governance principles are driven by the significance and success of past examples of successful shareholder activism (Kolk *et al.*, 2008). Following successful examples of shareholder activism, actions are made on behalf of civil society in the forms of principles and codes of abiding practice, for example the King III Report and the draft Shareholders Code for Responsible Investing (Kolk *et al.*, 2008).

According to Reid and Toffel (2009), a company's lack of ratification action following a shareholder resolution that it has supported has proven to threaten the competitiveness that the company has developed within the industry (Reid and Toffel, 2009). If this is the case, it can be deduced that adoption can be seen as a method of gaining competitive advantage, especially in developing countries such as South Africa, by attracting foreign investment from the highest emitting countries, mentioned in Kessel's submission (1999), including The United States of America, China and Russia.

The long-term sustainability of a company is threatened if it competes in an industry that is targeted by shareholder activism (Reid and Toffel, 2009). If the company does not satisfy its shareholders' needs, an untargeted company may alter its strategy and focus on the satisfaction of these shareholders, thereby disrupting the targeted company's ability to compete. These non-resolution-targeted organisations will know of the shareholder resolution that has not been responded to by the targeted organisations (Reid and Toffel, 2009).

## **2.8 The Competitive Environment in Attracting Investors**

Vyvyan, Ng and Brimble (2007) conducted a study of investment selection criteria and investor preferences. Interestingly, they find that the most important factors are those of performance at rates that are above average. In addition to this, they find that environmental factors are only moderately important. They conclude that environmental factors in investment selection are not common between all investors (Vyvyan *et al.*, 2007). But, the increasing trend toward considering environmental aspects of companies, especially in times of crisis should be kept in mind (Vyvyan *et al.*, 2007). However, the

market for shareholders is diverse in terms of demographics and associated investment preferences (Vyvyan *et al.*, 2007). Catering for some while not catering for others may be seen a lost opportunity cost of gaining potential additional investors. This study, however, was published in 2007 in an Australian context (Vyvyan *et al.*, 2007). It is interesting to consider what effects the global recession, which commenced at a similar time, might have had on investor preferences with regard to possible increased preferences toward more sustainability-orientated companies, which are argued to be safer investments especially in recessionary times.

The incidence of recessions and the subsequent impacts on the preferences of companies was researched by Berridge and Cook (2009). They draw interesting conclusions about the acceptability of shareholder resolutions in economic downturns. Interestingly, they recognise that companies support more environmentally-focussed shareholder resolutions at these times than in economic booms (Berridge and Cook, 2009). In addition to this, there was a general increase in abstentions from the votes to support these resolutions. Berridge and Cook (2009) believe that these abstentions indicate a positive shift of company sentiments toward climate change responsibility activities. In fact, the reflection of abstentions increased dramatically in the recession period. Since investors are assumed to be more defensive and less maverick in these downturns, one might call the additional support mentioned above as proactive defensive strategies initiated by these companies in gaining additional shareholder support and confidence, thus using the changing environment to draw competitive advantage. Additionally, Berridge and Cook (2009) observe that climate change sceptic-orientated resolutions decreased over the 2006 to 2008 periods.

One of the effects of applying the sustainable and environmentally-focused strategies is that organisations are forced to assess their operations in a more holistic approach, which may spark extended opportunities (Hart, 1995) (Buysse and Verbeke, 2003) (Verbeke *et al.*, 2009) (Debono, 2005). In the cases of companies that are of considerable size, they may discover constraints in their existing operations of which they had no prior knowledge. This may lead to practical innovation and assist the company in achieving future competitive advantage (Buysse and Verbeke, 2003) (Verbeke *et al.*, 2009).

## 2.9 The Role of investors in Sustainable Development

In addition, Higgs and Wildsmith (2005) explain that, when it comes to long term investment and shareholder interest, many long-term investors demand returns from companies that are sustainable and responsible. In these circumstances, companies are expected to appropriately align these objectives through practising superior management of financial performance, environmental, social and governance issues (Higgs and Wildsmith, 2005). In this way it may be concluded that long-term-orientated investors may require the investing practices of fund managers and companies to undergo an element of transformation in their approaches to the allocation of money (Guyatt, 2005).

Long-term investment return is often the result of the positive movements of the general economy, in addition to the sole decisions of companies and fund managers (Wildsmith, 2008). This is the basis of the role that investors play in the creation of good financial, social and environmental circumstances in the future. This is where the investor interests of short-term versus long-term investment time horizons become relevant. Vander (2004) explains that *“a short term investor is one who looks at buying low and selling high and is*

*therefore primarily interested in the timing of the market*” (Vander, 2004, Pg. 27) whereas long-term investors are more strategic in their approaches. They are more focussed on the *“ability to sustain and maintain”* returns in the future through *“profit and efficiency”* in their chosen investment segmentations and categories (Vander, 2004, Pg. 28).

The preferences of stakeholders, in this case investors, are key drivers in directing business practice in both the short and long term (<http://www.cdproject.net>). This paper argues that generally, but specifically in the petroleum industry, long-term investors hold vital positions in the organisational transition from poor environmental practice to more environmentally-friendly practice, and the catalyst in attracting investors through the first step of transformation is carbon disclosure (Tankha, 1999) (Reid and Toffel, 2009).

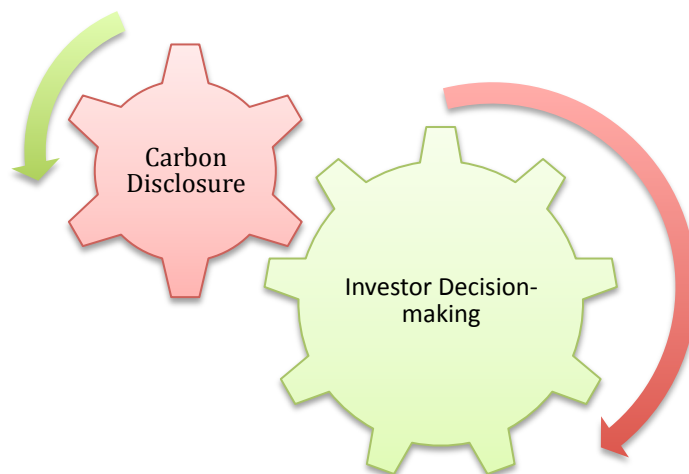


### Chapter 3 - Research Proposition

The purpose of this research paper was to explore the impact that the disclosure of carbon emissions may have on investor attitudes and decision-making.

#### 3.1 Graphical Representation of Research

FIGURE 1: THE IMPACT OF CARBON DISCLOSURE ON INVESTOR DECISION-MAKING



#### 3.2 Research Proposition 1

There is a positive impact on investor decision-making attitudes as a result of carbon disclosure.

The above proposition was developed and tested through the analysis of the outcomes of the semi-structured interviews (Appendix A; Appendix B).

If Proposition 1 is confirmed, one would be able to draw the following conclusions:

1. carbon disclosure plays a key role in investor decision-making;
2. the apparent impact of carbon disclosure is positively associated with investor attitudes; and
3. a company may develop competitive advantage and a positive future market position through the disclosure of carbon emissions.

One may expect to consider the possible conclusions mentioned above to perhaps be more relevant to some industries than others in the current business context. High or low carbon impact labels would be the most major determinants in terms of this research case.

## Chapter 4 - Research Methodology

The purpose of this paper was to gather pertinent information regarding investors' relationships with their investments and *vice versa*, with specific regard to their general and decision-making attitudes towards carbon disclosure.

Since allied to the study was to gather information about investors' and companies' attitudes towards carbon disclosure, richness of responses was required in order to develop relevant conclusions that may contribute to the body of knowledge surrounding similar themes. This suggests that the research fitted into the exploratory research paradigm (Saunders *et al.*, 2009). Robson (2002) refers to exploratory research as "*a means of finding out what is happening; to seek new insights; to ask questions and assess phenomena in a new light*" (Saunders *et al.*, 2009, p. 139).

Since this is a relatively new field of academic study, an exploratory research method was deemed appropriate in determining the most pertinent and objective results, according to Saunders *et al.* (2009). This suggests that it should be inductive and qualitative by nature. Saunders, Lewis and Thornhill (2009) explain inductive research as being characterised by:

1. the collection of qualitative data (Saunders *et al.*, 2009);
2. a flexible structure that allows for changes to be made on the emphasis of the research through the process (Saunders *et al.*, 2009);
3. the researcher being inherently part of the process (Saunders *et al.*, 2009); and
4. research that is relatively new to the general body of knowledge (Saunders *et al.*, 2009).

#### 4.1 Research Process

Once the type of methodology was determined, it became necessary to establish the process of data collection, together with the development of the sample.

Semi-structured interviews were conducted in order to gather the necessary information about companies' investment preferences, with regard to the relationship satisfaction between fund managers and their respective investments. Semi-structured interviews were the most appropriate form of interviewing in this particular case because the respondents needed to be roughly guided through the questions of the interview schedule in order to gain the most relevant information to this specific case. This meant that the researcher (the researcher was the interviewer of each interviewee) had to make judgement calls about the order and nature of questions depending on progression of the specific interview. The researcher found the methodology changing and developing through the progression from interview to interview. Evolving methodologies are common in qualitative research as the researcher uses insights gathered from each respondent to better the interview schedule and presentation of results throughout the process, as a result of the gaining of new found knowledge (Dana and Dana, 2005).

Saunders *et al* (2009) describes semi-structured interviews as “non-standardised” where the researcher has a list containing variant themes of questions, which may differ from interview to interview (Saunders *et al.*, 2009). This method was most appropriate in gathering pertinent company and investor preferences regarding their carbon disclosure strategies.

It should be noted, from the researcher perspective, that there was relevant bias that needed to be managed and controlled in order to contribute relevant and reliable research findings, given that this is an exploratory paper in nature and semi-structured interviews were conducted (Saunders *et al.*, 2009). The main bias that needed to be addressed by the researcher was interviewer bias. Researcher bias may disrupt the proceedings through the use of specific tones, gestures or wording of questions since the researcher may have preconceptions or opinions regarding the research topic (Saunders, 2009). It is for this reason that the interview questions, provided in Appendix 1 and Appendix 2, were designed from a clear and objective standpoint. This helped the researcher gain the trust of the interviewees and resulted in gathering the best possible information from them. However, in order for the researcher to have avoided the bias concerned, the researcher needed to conduct the interviews with the same tone as the questions (Appendix 1; Appendix 2).

It was decided to use two interview schedules, given that the objectives were different for the two groups of individuals that were interviewed (investors and investor relations employees from the various companies) as they would offer variant perspectives towards carbon disclosure. Despite the different interview schedules, the researcher was able to split the responses appropriately into themes (presented in Chapter 5) to enable the development of decisive and objective analysis, and associated conclusions. Since these were semi-structured interviews that called for rich subjective responses, the researcher needed to control response bias through careful design of the research questions. Response bias is typical of the semi-structured interview method. Saunders *et al* (2009, pp. 326) explains that “*this type of bias may be caused by perceptions about the interviewer or*

*in relation to perceived interviewer bias.”* One should always expect an element of subjectivity and defensiveness in face-to-face interviews relative to quantitative questionnaires, as the control mechanism is substantially less due to the potential subjective nature of the answers to objectively-formulated questions. In other words, interviewees may answer how they wish to answer. In this regard, the interview questions provided in Appendix 1 and Appendix 2 were designed as clear, concise and detached. It was the responsibility of the researcher to enforce strict control of the potential deviation of interviewees’ responses. It was expected that the interviewees would not provide full and concise answers for the purpose of formulating effective and objective questions. For this reason, the interviews were voice-recorded with the required permission of the interviewees in order to ensure the recording of every word spoken prior to the researcher’s analysis of the data.

It should be noted that a significant assumption of this paper was that that an investor who had an interest and confidence in a particular company position would purchase or trade in shares in such a company.

#### **4.2 Sample Development**

Once the most appropriate data collection method was selected, the sample needed to be defined. In order to gain the best understanding of the details surrounding these investor relationships, this study included both investors and companies. The company representatives that were interviewed were selected on the basis that the companies are high carbon-emitting companies in the South African oil and gas industry. The oil and gas industry was selected because this is the highest carbon dioxide emitter globally; according

to the Environmental Protection Agency (<http://www.epa.gov>). The company representatives were high-level investor relations officials, as the researcher felt they would be most aware of the company strategies as well as the companies' stance on carbon disclosure. Essentially, the sample was made up of two sub-samples: individual investors and fund managers (Sub-sample 1); and petroleum companies (Sub-sample 2).

#### **4.2.1 Sub-Sample 1 – Fund Managers and Individual Investors in South Africa**

A total of six semi-structured interviews were conducted. These interviews consisted of four fund managers and two individual investors (collectively investors).

In order to provide a complete research conclusion, investors needed to be researched in order to provide a holistic view of the research problem. The fund managers were made up of representatives from conservative investment funds and fund managers from investment funds that are more maverick in nature with a greater risk-appetite. The reason for selecting different profiles of fund managers was that they were expected to provide differing responses concerning the influence of carbon disclosure on their investment decision-making and attitudes.

The reason for selecting four fund managers and two individual investors, in the contexts of their investment mandates, was that the sample was representative of the population of investors. This representative sample helped to ensure the necessary validity and reliability of the research findings. The varying investment mandates were also seen to be vastly contributing to the analysis of the research.

#### 4.2.2 Sub-Sample 2 – Companies that operate in the Oil and Gas industry in South Africa

A total of three companies were deemed appropriate for this particular study, as the researcher felt that this number would be strategically relevant in the context of the research problem identification and research proposition found in Chapter 3.

For the purposes of confidentiality, the names of the companies have not been disclosed. The following three paragraphs contain brief profiles of the three companies that were investigated. The researcher aimed to determine company approaches to carbon disclosure from the companies' representatives.

##### 4.2.2.1 Company A

Company A is a state owned entity in South Africa that controls the country's petroleum industry commercial assets and does so on behalf of the Strategy Fuel Fund. It operates in the Oil and Energy industry and is classified as a government agency with 5000 employees. The company's headquarters are in Cape Town, South Africa. It achieved revenues of R11.019 billion and net profit before tax of R1.799 billion in the 2008/2009 financial year.

##### 4.2.2.2 Company B

Company B operates in over 90 countries and employs about 101 000 employees. This company operates in the oil and gas industry, earning 2009 revenues of \$278.2 billion in 2009. The company boasts some of the highest expenditure on research and development and on carbon emissions.



#### 4.2.2.3 Company C

Company C is based in South Africa and is traded on the New York Stock Exchange. It is involved in mining, energy, chemicals, petrochemicals, fuels, oils, and natural gas industries. It was founded in 1950. In 2009, it achieved revenues of \$4.4 billion and net profits of \$1.77 billion. It boasts net assets amounting to \$18.9 billion and net equity of \$10.9 billion. It currently employs 33 928 people. It has been a member of the CDP since 2006.

### 4.3 The Interviews

The interviews were conducted with the following interviewees:

1. two individual investors;
2. two conservative fund managers;
3. two maverick fund managers; and
4. three high-impact petroleum companies' investor relations department representatives.

A total of nine semi-structured interviews were conducted.

These interviews were conducted during the workdays of the interviewees for convenience. The researcher conducted these interviews either face-to-face or per telephone. Saunders *et al* (2009) explains that these methods of interviewing are appropriate for qualitative research when little is known about the research problem. They took place during the interviewees' general office hours in the morning since interviewees are more likely to provide superior answers at this time of day (Saunders *et al.*, 2009).

#### 4.4 Analysing the Qualitative Data

This section of the methodology refers to the process of converting the verbal responses of the interviewees into word-processed text to be used in the building of reliable conclusions for this paper.

The semi-structured interviews were audio-recorded and transcribed upon completion to ensure the most valid and reliable representation of both verbal and non-verbal queues, which in turn ensures the validity and reliability of the research conclusions (Saunders *et al.*, 2003). The transcripts will be kept confidential and saved under coded file names, as recommended by Saunders *et al.* (2003).

The data collected was compared to the research proposition in order to categorise responses into relevant themes within the research topic. This was done once the responses were summarised into relevant meanings and interpretations.

The nature of the research proposition set out in Chapter 3 was such that it inferred an inductive approach to the data analysis. An inductive approach to data analysis, as introduced in the beginning of this chapter, is a style of collecting data and subsequent exploration of the said data. This approach is commonly associated with the presentation and conclusions of data under relevant themes that have emerged from the results (Saunders *et al.*, 2009). This approach is also known as a grounded approach of data analysis.

The procedure of inductive analysis used by the researcher was analytic induction. Johnson (2004) describes this procedure as “*the intensive examination of a strategically*

*selected number of cases so as to empirically establish the causes of a specific phenomenon*” (Johnson, p. 165, 2004). This method is appropriate for a relatively unresearched theoretical phenomenon, which is the case with the impact of carbon disclosure on investor decision making attitudes in a South African context. The phenomenon in this case was the influences on decision-making.

#### **4.5 Relevance of the Research**

Upon completion of the research, the researcher, through the research findings, was able to infer, relevant information about investor attitudes towards carbon disclosure. This information will help companies (both high-carbon-emitting companies and low-carbon-emitting companies) to determine the most effective communication and strategic principles to promote and implement necessary changes to gain the trust and confidence of investors, through proactive and candid carbon disclosure.

Readers of the research will be able to deduce that if a company is demonstrating that its management understands, and is responding to, climate change risks, then investors will judge it more favourably as the intrinsic value of such a company can be more easily assessed. Additionally, investors will be able to predict with more accuracy whether or not a company is progressing within its particular industry and reducing its exposure to risks over time. Such comprehensive information would inherently lower the risk for any investor in making his investment decisions.

Additionally, the research results will confirm or refute companies’ concerns regarding their current communication and general strategies. The research will enable all

companies, especially those that are carbon-intensive, to determine whether or not investors care about the environment and climate change, and if so, to what extent. They will be able to determine whether or not their carbon disclosure and environmental communication should yield additional shareholder interest (and thereby investment) as well as gain competitive advantage and develop a future market position, provided that the research proposition is supported within the assumptions that have been made.

Since little research has been conducted in South Africa in this area, this paper will form the basis for future quantitative and qualitative exploration.

The findings of the research could be of interest to service providers and drafters of annual reports. These people would include auditors, corporate governance advisors, public relations officers and marketers. It would also be of significant value to companies that are considering listing on stock exchanges.

#### **4.6 Relevance to the South African Context**

The research will help guide South African companies in terms of their long-term strategies, with specific regard to sustainability and expansion. It may also help soften the blow in the minds of investors when companies choose to embark on costly sustainability projects.

South African companies may decide to act more proactively with regard to climate change. This may attract additional foreign investment in these companies.

The findings of this research may help to provide organisations with relevant information about their investors' trading preferences as well as help to avoid potentially the harmful shareholder resolutions highlighted by Berridge and Cook (2009).

## Chapter 5 - Results

### 5.1 Introduction

The purpose of this research was to determine, if at all, the corporate disclosure of carbon emission risks has an attitudinal affect on investors or investor stakeholders in their investment decision-making. In order to prove or disprove this theory, the interview schedule was geared according to the research proposition proposed in Chapter 3.

This chapter of the research presents the results of the semi-structured interviews that were held with nine interviewees, in accordance with the research methodology found in Chapter 4. The interviewees' answers have been analysed according to various themes that have emerged and that contribute meaningfully to the research proposition outlined in Chapter 3.

It should be pointed out that the researcher may be viewed as biased in favour of carbon disclosure. Readers' analyses should be cognizant of this perspective.

The Sample comprises two Sub-Samples in the South African market, namely, Investors and Companies. The Sub-Samples comprise the nine interviewees introduced in Chapter 4. The following Table 1 sets out the Sample structure as well the interviewees' underlying approaches:

TABLE 1: SAMPLE STRUCTURE

SAMPLE	
Sub-Sample 1	
Interview with:	Nature of Investment Mandate/Ownership:
Investor A Fund Manager	Conservative Investment Philosophy
Investor B Fund Manager	Conservative Investment Philosophy
Investor C Fund Manager	Maverick Investment Philosophy
Investor D Fund Manager	Maverick Investment Philosophy
Investor E Individual Investor	Mixed Investment Philosophy
Investor F Individual Investor	Mixed Investment Philosophy
Sub-Sample 2	
Interview with:	Nature of Investment Mandate/Ownership:
Company A	State-Owned Enterprise
Company B	Listed Company
Company C	Listed Company

## 5.2 The Emergent Themes of the Research Findings

Upon analysis of the proposition outlined in Chapter 3, where the researcher proposes that **there is a positive impact on investor decision-making attitudes as a result of carbon disclosure**, the following themes have emerged after analysis of the semi-structured interview transcripts:

1. The Evolution of Commercial Thinking in terms of Carbon Emissions and Carbon Disclosure;
2. The Relevance of Disclosing Carbon Emissions and Disclosure Practices;
3. The Association of Risk and Sustainability; and
4. The Emerging Market of Socially Responsible Investors.

The researcher analysed the data collected in accordance with the analytic induction method, which was determined to be appropriate by the researcher as discussed in Section 4.4 of this paper.

### **5.2.1 Theme 1: The Evolution of Commercial Thinking in terms of Carbon Emissions and Carbon Disclosure**

In order to understand and identify a trend of a progression in the rationale of the general investment market with regard to carbon emissions, the respective perspectives of the two sub-samples were obtained in the field through the semi-structured interviews (Appendix A; Appendix B).

It was important to determine whether the interviewees were aware of the concept of sustainability and the issues surrounding climate change in order to offer rich responses to the remaining the questions, as outlined in Appendix A. The richness of the answers was enhanced by the nature of the question, adaptation to each individual's occupational or personal investing philosophy, and the contrasts of their personal views to their investment mandates. The question set the context for the remaining questions that followed, forcing the interviewees to answer accurately, honestly and without bias.

The Investor Sample (Sub-Sample 1) interviewees were asked whether or not they were familiar with the concepts of sustainability and climate change, while the Company Sample (Sub-Sample 2) interviewees were asked whether an increase in focus on sustainability and climate change has been identified within their organisations.



The interviewees' answers were given according to their own personal knowledge base without mention by the researcher of their investment mandates.

Upon review of the responses to these questions proposed during the semi-structured interviews, there was a clear and positive trend amongst Sub-Sample 1 interviewees. Each portrayed an accurate, thorough knowledge of the concept of sustainability and its relevance to climate change. It should be noted, however, that certain interviewees displayed a more in depth knowledge than others with regard to general sustainability and carbon emissions.

Approximately 50 percent of the interviewees felt that, while climate change is an issue facing society in the future, it is difficult for them to fully conceptualise the problem in the current business context, especially in their investment decisions, since no underlying government policy has been established to regulate company-investor relationships in this regard.

Particular institutional fund managers indicated a thorough understanding of the impact of sustainability on their personal lives, as well as on commerce, in the comments below:

*I would define sustainability as the ability to make efficient use of resources without jeopardising the ability to do it in the future. And for me, as a portfolio manager, I have to ensure that the capital of investors will grow appropriately taking human, economic and natural resources into account (Investor A).*

This specific response highlighted a potential trend in a more progressive approach to assessing efficiency, taking future operational aspects of a company into account, as opposed to the past understanding of simply making the best possible use of existing resources. This is a futuristic approach that would help to distinguish proactive and inactive companies.

*“It’s the integration of environmental and social issues in business analysis and decision-making (Investor B).”*

*My understanding is that sustainability refers to intergenerational equity. We cannot exist in a way that has zero impact on the planet. However, assuming two types of resources, renewable and non-renewable, I understand sustainability to refer to sustainable utilisation of renewable resources (ie harvesting at the ‘golden ratio’) and utilisation of non-renewable resources in a manner that recognises the need for investment in alternatives and that is sensitive to the issue of non-reversibility (Investor C).*

However, certain of the interviewees were less concerned about the issue of climate change than they were about the sustainability of grounded business dealings. Some believed that the continued production of capital income and growth would occur naturally and the issues of climate change would be dealt with on a secondary level.

*“If they [(companies)] do the right things, it’ll show up in the numbers (Investor D).”*

*“The most important issue here is the sustainability of returns and the preservation of capital. It’s about not taking unnecessary risks over the long term (Investor D).”*

*A perfect investor universe does not exist. Many people are buying stocks for the wrong reasons because it’s difficult to put a portfolio together when you want liquidity, tradability and ease of continuation. It’s a nice theme but it’s not really applicable in practice (Investor E).*

An investment decision that is made by a quantitative investing house is based on financial ratios and statements only, whereas an investment decision that is holistically considered includes the considerations of both financial and non-financial elements, namely qualitative and quantitative aspects. In truth, neither system is better nor worse than the other. They are simply different investment philosophies, both of whose primary goal is to grow capital and returns. Quantitative investment houses assume that the non-financial (qualitative) attributes of a company will show positively or negatively in the financial statements and performance of the company, and therefore do not warrant that which is seen to be unnecessary additional focus.

It should be noted that Investor D was a quantitatively-styled fund manager. This means that for him social issues are seldom taken into account as factors of investment analysis and financial metrics are usually the only metrics considered in decision-making. However, Investor D said that when considering the sustainability of returns and the liquidity, tradability and ease of continuation, he considers the quantitative metrics to be the most

appropriate tool in benchmarking investments. In order for these three aspects (liquidity, tradability and ease of continuation) to apply in practice, he relies on a broad and competitive market that is conducive to future share trading. This concept of tradability would have to be well-considered and thereby included in the process of buying and selling of shares. Therefore he feels that it would be most appropriate to consider the selection techniques of the entire market in determining and benchmarking the most appropriate investments.

Since the broader market includes constituents that may factor non-financial elements of a given company in investment analysis, a quantitative investor would need to keep aware of other potential investment philosophies when trading shares.

In essence, there is no fundamental problem with only quantitative financial analysis. But, the companies and thereby the shares that are being analysed have price earnings ratios that have been determined through both financial and non-financial company and the nature of a company's business. Since ratios consider both financial and non-financial elements of a company's performance and operations, it is submitted that the decision-making process of investors should factor in non-financial elements too.

The individual investors were asked the identical questions to those of the fund managers. Some of their responses to this question included the following:

*"I understand that sustainability refers to best practice now for the future, but I'm more sympathetic towards human issues rather than climate issues, at least for now (Investor E)."*

*Companies need to be measured according to a number of things, like BEE and environmental impact. We need to make sure that economic imperatives are not destroying the very basis of our existence. Corporations need to be aligned to these concepts (Investor F).*

From the company perspectives in Sub-Sample 2, the researcher was able to further infer that individual investors are indeed aware of sustainability in the commercial context.

The purpose of asking whether issues of sustainability had become increasingly significant to the various investor relations representatives in the three companies was to confirm an suspicion emanating from this paper, that there is positive trend of increased sustainability thinking focus within the context of these carbon intensive companies. This suspicion was confirmed during the various interviews as there were unanimous “yes” responses to the question of whether there is a positive trend of increased sustainability thinking focus within the context of these carbon intensive companies amongst the representatives of Company A, Company B and Company C.

In the case of Company A, the responses were relatively short and abrupt. This may be because this company is state-owned and is not directly subjected to the usual public, market and stakeholder pressures and scrutinies as opposed to Company B and Company C. Additionally, the nature of the responses from the representative of Company A was somewhat apathetic towards the issues of climate change and carbon disclosure compared to the representatives of Company B and Company C. The main reason for this is that share tradability and liquidity is not really a consideration in state-owned enterprises, and

state-owned entities are not driven to keep their reputation in place for the purposes of share price.

Listed companies, with relevance to this research problem, are primarily responsible to their current and future investors whereas in the case of state-owned enterprises, they are accountable mainly to vestiges of government.

The relationship that exists between listed companies and their shareholders is largely determined by the liquidity and tradability of a company's shares, upon analysis of the interview with Investor D. These two elements often account for the most relevant factors in the pricing of shares. If one investigates whether a particular share is tradable and or not, the demand for the particular share will need to be well considered. This demand is determined through the analysing of past financial performance of each share, and would therefore apply to both quantitative and holistic investment houses' decisions.

State-owned entities are primarily accountable to the predilections government. It can be assumed that government is more focussed on political factors including regulatory and growth considerations. Government holds strategic investments and does not necessarily adhere to the market practice of protecting share price levels, and thereby liquidity. In this way, it seems that government is less an active stakeholder participant in terms of typical financial performance than shareholders are in listed companies.

The general view of the company interviewees was that sustainability (and carbon disclosure in particular) is important in today's commercial context. Company B, for example, has made drastic changes to its operations and associated capital expenditure

due to the pressures emanating from the investor market, but more importantly, arising from pressures brought by various stakeholders calling for the improved “cleaned-up” actions of oil and gas companies.

In the case of Company C, the concept of carbon disclosure has become increasingly pertinent in the context of South Africa. This was confirmed by the company’s investor relations interviewee and through the company’s annual participation and good performance in the CDP.

The emergence of the sustainability and climate change concepts has been acknowledged by both Company B and Company C. Some of their representatives’ responses included the following:

*No doubt about it [(the emergence of sustainability and carbon emissions has become more important to our organisation)] ! The Kyoto protocols and public focus on carbon, financial and regulatory compliance call for action from us. Although carbon hasn’t caused us to implement any rapid changes to reporting but it’s definitely one of the elements we report on (Company B).*

*If you go back about 5 years, we didn’t participate in the CDP. Since then we have and reported in our annual sustainability report too. The level of the disclosure is increasing from year to year and is of growing importance to the world, so it will continue to do so (Company C).*

In conclusion of this theme, it was apparent to the researcher that there have in fact been elements of evolutionary thinking and practices amongst the general investor and company markets. The research shows, on analysis, that all investor stakeholders, whether quantitative or holistic in their approaches, are affected by the non-financial elements of company reporting, as financial and non-financial elements not mutually exclusive. Investors need to consider the appeals of the broader pools of investors in order to ensure the trading of liquid and tradable investments to allow for sustainable ease of trading in the future. It is in reality the goal of all investors to generate future sustainable growth of capital.

### **5.2.2 Theme 2: The Relevance of Disclosing Carbon Emissions and Disclosure Practices**

The researcher undertook interviews with investors (Sub-Sample 1) to ascertain their opinions and feelings towards general disclosure of non-financial elements of company reporting, as well as their particular attitudes toward carbon disclosure.

One of the key objectives with this part of the interviews was to question, from a fundamental perspective, whether investors see value in the disclosure of non-financial elements of reporting.

Two distinct trends emerged once again as to the attitudinal differences, depending on whether their investing decisions were quantitatively or holistically focused. It was also noticed that there is no single trend with regard to socially responsible investing and specific non-financial elements being more important than others. From the analysis of the



results, how investors actually determine and what informs their non-financial preferences is widely dependent on the context of the business. This context, according to the interviewees, is determined by the industry sector and business cycle in light of future inherent liability.

The only non-financial common factor that all respondents believe is important is the management component in terms of Black Economic Empowerment (BEE). It should be noted that BEE is a policy set by government enforced through legislation and practice, and is not instilled by civil society, whereas carbon disclosure is borne from civil sources.

Additionally, the researcher found that all individual investors and fund managers see value in analysing annual reports and financial statements in their private capacities. While this may be expected from fund managers, one would assume that some individual investors might be more passive and allow their brokers to act on their behalves in their investments. It was found that both individual investors interviewed analyse annual reports themselves and instruct their brokers accordingly.

A general assessment of risk was researched and analysed in terms of the specific non-financial elements of reporting. Presented below are a few of the comments offered by the various fund managers in Sub-Sample 1:

*Our investment process gives explicit recognition to three risks or factors; however, the categories are 'broad and soft' and should not be interpreted in a 'pigeon-hole' manner. In no specific order, the first factor is referred to as managerial risk - governance, compliance, reduction of manager-specific risk, succession, management*

*depth, consistence, transparency and so on. The second risk factor is referred to as environmental risk, which relates to the operating environment and the specific risks flowing from this. In this set, we include a wide range of factors, such as political risk, economic risk - currency is a case in point- and 'green' environmental risk - damage to environment, unsustainable practices, clean up or rehabilitation costs and so on. The third risk is litigative - for example anti-competitive practices- and legislative risk (Investor C).*

*The most important factor to look at is the management, the skills of management, the passion, but I wouldn't say that I look at anything specific. If a company does the right things, cleaning up, doing social responsible things, there's a happier workforce and it will show up in the numbers (Investor D).*

*It's dependent on the sector, the nature, types of forms of capital that are important, other than management. Each opportunity is looked at from a sustainability perspective...like what are the long-term drivers that are likely to be relevant and appropriate for the long-term? This way, you are able to take advantage of the opportunities and see how they are managed in the short and medium term (Investor A).*

*I look at sustainability in a holistic way, there's no single indicator that's relevant to all companies. We try to obtain as much information as possible, but not all social issues. The information must be material to that specific investment requirement (Investor B).*

The comments that were offered by the individual investors in Sub-Sample 1 were as follows:

*It's good to see what companies are doing, why invest in a company in the first place when they're doing damage to the environment? If they are being proactive, it's a different story...But at the same time, supernormal profits are welcome (Investor E).*

*"Never looked at environmental impacts per se, but would definitely look in the case of these high carbon impact companies. I like to look at things like BEE, transformation, some CSR [(Corporate Social Responsibility)] (Investor F)."*

One may infer, upon analysis of these results, that carbon disclosure is an issue of increasing importance amongst investors. This may not apply strictly to all company and share instances, but will surely apply to those business cases that are usually associated with high carbon emission intensity.

As one might expect, the interviewees had differing beliefs as to the relationship between the disclosure of non-financial elements and future performance. Some interviewees believe that the disclosure of the non-financial elements reduces operational risks, whereas others believe that the disclosure of non-financial aspects is simply a reputational enhancement which will not affect financial performance, company value or share price. It may be concluded, that future performance may be associated with the disclosure of non-financial elements such as carbon emissions. Future financial performance is often considered dependent on current performance.

All of the respondents believed that *“there is no such thing as non-financial factors, everything translates in[to] financial [terms] over time if not managed effectively (Investor C).”*

The investor interviewees offered valuable opinions as to the effect that certain events and the media have, driving stock movement responses in the general market place. Some of the fund managers’ responses appear below:

*...Perhaps more out of a company being seen as socially responsible. It’s got that reputational aspect to it. You want to invest because you believe they are environmentally-friendly. It’s politically correct and it’s an expectation, especially in the resource industry (Investor D).*

*“In most cases, yes [the media has an impact on decision making process]. However, in some instances there are events which cause investor over-reaction and mispricing of assets (Investor C).”*

*[Future financial performance] often depends on the market cycle in the case of [a] high impact company that has inherent liabilities in due course; like the oil and mining industries. Good disclosure makes for good valuations, but it may be bad in the short-term. It does over time create competitive advantage through the differing factors. We assume [the company] is disclosing or not disclosing, and it may only mean shares are more accurately priced. But the market will regulate over time, and it might cause trading at a discount, so it’s definitely associated with some performance (Investor A).*

*“You can see if you don’t take these issues into account that it can destroy value. The disclosure adds value and reduces downside risk. It’s positively correlated with performance, that’s why it’s taken into account (Investor B).”*

The responses from the individual investors included the following:

*“Since disclosure is not a government policy, it may be correlated because it can make a company different, which influences the share price (Investor E).”*

*Disclosure is definitely associated with share price performance in terms of profits and the PE [(Price Earnings)] ratio. From a price/earnings perspective, it might affect the valuation. You have to think of it in company performance versus share performance (Investor F).*

The analysis of the above-mentioned responses introduces the role of the inherent value in reputational aspects of a company: having leverage on the pricing of shares. One may infer from this that the reputation of a company has a direct effect on the liquidity and tradability of shares. The media also, according to the responses, has a direct influence on a company’s reputation.

The researcher then asked the individual investors in Sub-Sample 1 about their specific stance with regard to carbon disclosure. Given the subjectivity of the question, the researcher expected highly varying responses.

Despite this expectation, the researcher was able to draw a general trend with only one interviewee having no particular stance or opinion on the importance of carbon disclosure on selecting investments. This particular interviewee (Investor D) did not deny the relevance of carbon disclosure, but believes that responsible actions of a company will naturally and positively translate in the market in gaining shareholder confidence without active disclosure. The rest of the interviewees were more in favour of carbon disclosure and were more open to using the carbon counts provided in annual reports as factors of investment decision-making.

It should be noted that investors who are in favour of carbon disclosure, appear to be interested for different reasons. Some investors were of the attitude of “the more disclosure the better”, while others felt that there is a place for carbon disclosure, but were sceptical as to whether adverse media reports affect company perceptions and share price. There was also call amongst some of the investors for government regulation in this regard as they felt legislation would help to regulate the market, and improve transparency of companies and valuation rationales.

Some of the fund manager responses included the following:

*“We do not have a specific carbon-impact policy. We are aware of carbon ‘neutrality’ in our investment stance (Investor C).”*

*“Not at all, good performance will come out in the numbers (Investor D).”*

*If the client wants us to track the SRI [(Social Responsibility Index)] we will, otherwise we look for the most appropriate investments in term of [financial] performance. (Investor D) It's beneficial, and I would still invest in a carbon-emitting business as the market sometimes overstresses these issues, but at the same time, the more disclosure the better (Investor A).*

*We engage with companies because taking action helps society in the long-run. Even though we are a small firm, we feel that we can positively influence the future and change behaviour, that's why we associate ourselves with the CDP. We are sustainability aware and conscious because carbon disclosure is important (Investor B).*

The responses of the individual investors were as follows:

*"What's worse? Not disclosing at all? Or just disclosing bad stuff? I like transparency (Investor E)."*

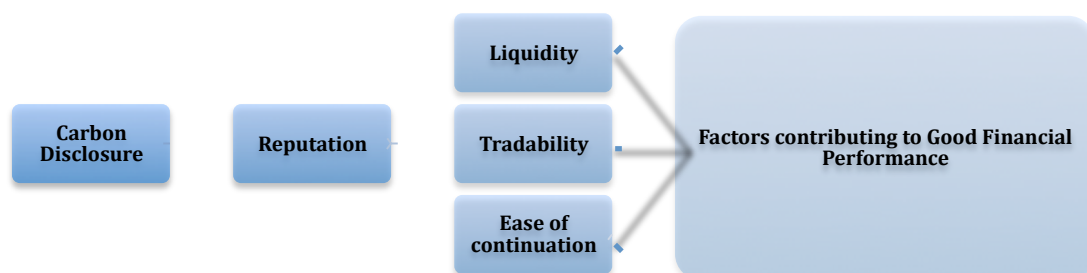
*"Educated decisions are based on information and not being left in the dark (Investor E)."*

*"I don't invest in high carbon impact industries, tobacco industries or anything that directly threatens our welfare (Investor F)."*

*"[Climate change] is no 'Y2K problem' that the media throws out of proportion: this is real. And it needs to be well considered (Investor E)."*

In summary of this theme, one may deduce that a given company may choose to compete in the market place through the adoption of a reputation driven strategy, which is driven by favourable or unfavourable media comment and past financial performance, through the disclosure of carbon emissions. The voluntary disclosure of carbon emissions may come to form part of a company’s value proposition, and such a company may use it accordingly to retain current investors and attract new investors. Thus, the following relationship seems to exist in line with the perspective of the investors who made up Sub-Sample 1:

FIGURE 2: THE IMPACT OF CARBON DISCLOSURE ON LIQUIDITY, TRADABILITY AND REPUTATIONAL ASPECTS



The relationship depicted above, states that the disclosure of carbon risk has a positive effect on liquidity, tradability and reputational aspects of a company, thereby contributing positively toward strong financial performance. The inverse relationship may also be said to be true, especially in the case of analysing high carbon impact companies. It should be noted, that, upon analysis of the various responses, carbon disclosure is not the only non-financial element of reporting of which a company may take advantage in attracting



investors; but for the purposes of this particular paper and research problem, it is most relevant to the proposition outlined in Chapter 3.

In proving the relationship depicted in Figure 5.1, discussions were held between the researcher and the three company representatives that comprise Sub-Sample 2 regarding their perspectives and disclosure policies with regard to carbon emissions in addition to the proposed relationship above.

It was interesting to see and analyse whether the sustainability concepts mentioned in the previous theme had translated, in terms of carbon disclosure, into altering the ways that companies operate and implement their communication strategies.

A trend of the carbon disclosure-related perspectives of the various companies began to emerge owing to the nature of ownership of the various companies. The listed companies explained a few of the various ways in which they disclose their carbon emissions and the state-owned enterprise simply stated that “[Company A] *currently [has] no public disclosure beyond participation in Department of Environmental Affairs GHG [(Green House Gas)] inventory*”. Company A is not a participating member of the CDP or any other relevant voluntary carbon disclosure initiative, according to the interviewee. However, it should be noted that Company A does disclose details about its carbon emissions upon the request of potential investors, even though it is not necessarily made available to the marketplace. The ability to maintain and sustain future growth in the future is a requirement of the South African government, where the government is a key stakeholder

of a company and has a vested interest. However, these factors may overlook the driver of liquidity, which proved vital in the public market place.

Regarding Company A's history of disclosure, the interviewee representing Company A stated: *"the company will be commissioning a carbon footprint of all the activities in this financial year and the current policy would be to disclose the relevant information to potential investors upon request."* Upon analysis of this particular response and the wording *"this year"* suggests that Company A has not been forthcoming with carbon disclosure in the past. This shows us that state-owned entities may be slow to react to the norms and strategies of the public market place.

Both Company B's and Company C's representatives explained that they actively participate in the CDP, and regard it as integral in their market communication in satisfying certain groups of investors. Company B explained that *"only a certain group, and it's a small group of our investors [is] SRI focussed. The majority are after long-term performance and sustainability. In turn, it's our responsibility as a big company to consider the environment in everything we do"*. Both Company B and Company C produce annual sustainability reports that are made available to the public via internet resources as well as hardcopy as per specific investor requests. Responses of both of these company representatives included the following:

*We produce a sustainability report every year where we disclose all GHG [(Green House Gas)] emissions. We also report a number of other metrics such as energy intensity of oil*

*production. Also, all the gases are included in graph format so people can understand what has been emitted year on year, all the way back to 2000 (Company B).*

*We participate in the CDP, but you'll probably find more information in our sustainability report, which is found online, as some of the information that we're judged and graded on is confidential. There are no [financial] numbers omitted, more like financial metrics that we are not allowed to disclose under normal standards (Company B).*

*"In the CDP, we are on the Leaders Index, which is reserved for the top 10 or 15 percent best performers in each industry (Company C)."*

*At this point the disclosure is voluntary. There's no legislation yet. But in some areas there is an element of legislated disclosure, but in general I would say its reported in our sustainability reports and other initiatives such as the CDP, where its more qualitative than qualitative (Company C).*

*"We report only those carbon related risks that are the highest ranked in order of importance (Company C)."*

*Informally, if investors ask for more detail we'll give it. We generally don't give more detail than we offer to the public unless it's for explanation, which will be found in our*

*sustainability report. As we get the investor feedback, we find ourselves giving more information- the game is clearly changing (Company C).*

One of the key observations that was established during the interviews, was that, from the perspectives of Company B's and Company C's representatives, there was an increase in demand for enhanced disclosure around carbon associated activities. This analysis renders the relationship proposed in Figure 5.1 above true.

### **5.2.3 Theme 3: The Association of Risk and Sustainability**

Risk appetite was one of the differentiating variables between individuals that defined Sub-Sample 1. A total of six interviews were conducted from Sub-Sample 1, comprising two "conservative" fund managers, two "controversial" or "maverick", and two varying individual investors. This sampling method allowed for objectivity in the results that were put forward by the various respondents.

50 percent of the fund managers operate under the long-term investment portfolio bracket. The other 50 percent operate under the medium-to-long-term investment bracket. While this was an unforeseen factor of the sub-sample, the variance adds to the validity and reliability of the sample making it more representative of the attitudes of the South African investor community in terms of the propositions of this paper.

While the short-term investors claim to be long-term in their approaches, they seem to trade some investments on a quarterly basis. This may be seen as the more opportunistic

approach in growing capital as quickly as possible. This approach will be largely influenced by their investment brokers' short-term and periodic recommendations.

Longer-term investors would be more interested in the sustainability of the companies in which they invest than short-term investors, as short-term investors generally trade according to share price performance, which may be influenced by a number of macro or micro events and economic factors (as discussed in Chapters 1 and 2). The benefits of carbon disclosure, mentioned in Chapter 2, are long-term orientated. For this reason, the sample seems to have been adequately selected in terms of the research problem and associated research proposition.

It was important to determine whether the companies selected were correct in their assumptions as to which investor market category was their target. According to all three of these companies' representatives, the associated investors are regarded as medium to long-term. This was important for the validity and reliability of the research findings as the investor sub-sample proved to be consistent with the views of the companies, which may attribute credit to the research findings and associated analyses.

The reason that information regarding time horizons is relevant to this research problem is that, according to the information provided in Chapter 2, general sustainability is of more interest to long-term investors than to short-term investors or traders, as their motives are different to each other. The motive for long-term investors is capital appreciation over an extended period of time, while the short-term investor motives are generally for pure profit and are opportunistic in nature.

Some of the interviewees' (from Sub-Sample 2) answers included the following:

*"In terms of big companies like ours, there are more people long, partly because of the big market cap and dividend (Company B)."*

*"Definitely more long than short. There is a large group of our investors that hold onto shares as long-term investments (Company B)."*

*I would say that they are generally long-term. But there is definitely opportunity for short-termers and hedge funds. In reference to carbon disclosure, short-termers would only be interested if there's a catastrophic event that directly or indirectly affects our business. The investors' understanding of carbon and other social issues will vary - it's still very early in this game (Company C).*

The researcher notes that there are no responses from the interviewees in Sub-Sample 1 in this regard, since this question was only relevant to and asked of the interviewees in Sub-Sample 2.

#### **5.2.4 Theme 4: The Emerging Market of Socially Responsible Investors**

Thus far, the perspectives of investors as well as those of investor relations representatives of the various companies have been researched and presented. Upon analysis of the investor perspectives from Sub-Sample 1 detailed throughout this chapter, as well as theoretically in the Literature Review found in Chapter 2, one may conclude that investors are in fact socially responsible in their investments. The results propose that there is a

strongly emerging relationship between well-performing investments and companies displaying good corporate governance and sustainable practices, which focus on both financial and non-financial elements. This is because the investors and fund managers would not profess to invest in poorly-performing investments and they do profess to consider the above non-financial factors. Additionally, institutional investors who make use of quantitative methods only, indirectly support this proposition since they are susceptible to the same company and share price valuations as all of the investors in the market. The reason is that the liquidity of shares is being driven by market demand (amongst other factors) and is closely associated with strong market performance.

However, it should be noted that these are not the only factors that would govern predictable long-term investment performance, so this proof may not be absolute with regard to sustainability being the only factor. But for the purposes of this paper, the information found supports the notion mentioned above in the case of listed companies.

Additionally, research was carried out regarding the perspectives of companies toward their investors. The companies' representatives (Sub-Sample 2) were asked whether they felt that their investors were socially responsible in their selection of their investments or not. The question was key to the nature of this research, which was to seek an understanding of the dynamic perspectives between these relationships. The question is conversely related to the questions asked of the various individual and fund manager interviewees.

Once again, as was expected, there was an apparent trend in the answers of Company B and Company C which were different to that of Company A (the state-owned enterprise). Both Company B and Company C believed that their investors are socially responsible in their investments, but to different extents. Company A explained that the concept of sustainability is important but not a key factor in the South African government's comprehensive and strategic mandate. This was evident in the response of Company A, stating that *"to date the issue of sustainability has not been considered as a primary consideration."*

When the company representatives were asked if they felt that their investors are socially responsible in their investments, the following responses were provided:

*In general, there would be a very small number of investors that are socially responsible, but all major investors would look at sustainability as important, and that includes socially responsible actions. We need to perform properly in their eyes as they have stakeholders themselves that take sustainability into account - they never want reason to question whether their funds are coming under pressure. In this way, they can engage with us if they feel we are acting improperly (Company B).*

*Some investors say they are socially responsible. Nobody will say they are irresponsible. The general fund manager's attitude is that if he makes money for his shareholders and fund, then he's responsible. It doesn't necessarily work with social issues but disclosure will be priced into shares one way or another (Company C).*



*Sustainability in general is important to investors. But we have to remember that there are 2 types of investors here. Those that are SRI focussed, and those that are not. The investors we are talking about are a small percentage of the investment community. Main stream funds will have an environmental and social layer that will make appropriate recommendations in this regard. So it's a consideration but it's not the most important factor, but all 'factors' are part of investment criteria (Company B).*

*"The average investor is looking at sustainability and carbon disclosure as issues, and there are more and more funds and initiatives [that see these as issues] that have become more mainstream lately (Company C)."*

*We've got more than 600 million shares, and a broad range of investors internationally and in South Africa varying from large shareholders, unit trusts-they cover a whole spectrum of investors. They all come with different perspectives and they all believe they're getting value (Company C).*

### **5.3 Additional Information**

The investor Sub-Sample 1 was made up of individual investors as well as fund managers. One of the trends that emerged was a difference in investment philosophies between the interviewees. Analysis of the various answers suggests a difference in the information provided owing to investor interest in quantitative information only, or alternatively both quantitative and qualitative information. This trend was identified upon the transcription of one of the fund manager interviews where he explained that *"we are a quantitative*

house” (Investor D). This meant that this particular fund analyses investments in terms of financial and operational ratios with the assumption that respectable and responsible management is behind good results. This assumption, in the case of strong investments, assumes the qualitative factors in a business would contribute the quantitative results.

Company B does not seem to consider the life-cycle carbon impact of its produce as their responsibility. The emissions that it discloses are limited to the exploration of resources, production, refinery, transport and sale to their customers. The interviewee from Company B drew a clear distinction between the company’s direct carbon impact and its indirect carbon impact. The attitude of the representative of the company was that the focus on the oil and gas industry is often over-estimated and perhaps over-stressed. The company does not see itself as responsible for the emissions of the cars that make use of their petrol, for example. The representative stated the following to support this notion:

*Contrary to what you might think, [Company B] is not a massive carbon emitter. Obviously in oil - yes, but from direct emissions, it’s not the largest of the emitters around. The direct carbon impact is mainly from the oil and chemical refineries, as well as from the flaring of natural gas, which has come to an end to a large extent. We are not massive emitters on a relative scale but it’s hard to get over that from a public standpoint, so we try to do more than required (Company B).*

The representative from Company B also explained how the reduction in carbon impact in the oil and gas industry is a collaborative effort between themselves and the respective governments of the countries in which they operate. The interviewee explained the

controversial concept of gas flaring, which is the burning of wasted greenhouse gases that gets burnt on a continuous basis causing damage to the earth's atmosphere. To a large extent, these operations have been reduced throughout the world, but there still are areas that operate flaring operations purely because of the infrastructure investment that would be required to contain and preserve the gases. According to the interviewee from Company B, the onus is on respective governments as well as the oil and gas companies to rectify these impacts.

*We don't believe in continuous flaring. Historically, in the oil and gas industry, it was sometimes too expensive to install the appropriate infrastructure, so it was burnt in the air. Since carbon dioxide and other gases became a real issue, the industry as a whole has adopted the attitude that it's not acceptable anymore. We still have one area where flaring is still happening because of the security and political situations. You need government funding to capture these natural gases, but the government there doesn't grant it. We do put this in to our sustainability report. The process of capturing the natural gases is generally successful except in Nigeria, where we have this collaborative problem (Company B).*

#### 5.4 Conclusion

In conclusion, the researcher analysed the proposition offered in the beginning of this Chapter:

**There is a positive impact on investor decision-making attitudes as a result of carbon disclosure.**

In order to justify support or non-support of this proposed statement, one needs to understand the various commercial impacts in the results presented in this chapter. The main potential “impacts” are as follows:

1. Would the disclosure of carbon emissions influence an investor consider:
  - a. buying shares?
  - b. selling shares?
2. Would a company that discloses carbon emissions gain:
  - a. competitive advantage?
  - b. reputational enhancements?
  - c. long-term investor confidence?

The answers, according this research were “yes” to all of the questions mentioned above.

In this way, it was deduced that the proposition statement was in fact true.

## Chapter 6 - Discussion of Results

### 6.1 Introduction

The results reported in Chapter 5 have wholly answered the research questions posed in this paper, and provided content to the main research themes which were outlined in Chapter 5:

1. The Evolution of Commercial Thinking in terms of Carbon Emissions and Carbon Disclosure
2. The Relevance of Disclosing Carbon Emissions and Disclosure Practices
3. The Association of Risk and Sustainability
4. The Emerging Market of Socially Responsible Investors

The answers provided rich insights regarding the research problem outlined in Chapter 1 and theoretical context in Chapter 2.

The objective of this chapter is to combine and discuss the responses from the various interviews noted in Chapter 5 with the issues raised in research problem outlined in Chapter 1, the theoretical arguments in the Literature Review found in Chapter 2 and the research propositions found in Chapter 3. To this end, the results are linked to the relevant literature with the objective of either confirming or refuting the theory in Chapter 2, or providing alternate views that are more relevant to South African context.

This chapter culminates in a concluding summary of the insights gained from the research.

The overall findings in Chapter 5 suggest that carbon disclosure has a positive effect on investor attitudes and associated investment decision-making.

## 6.2 Analysis of Research questions

In order to fully understand the results from the interviews in Chapter 5, one needs to acknowledge the two types of investment philosophies that emerged from the interviews. These philosophies include both quantitative and holistic investment analysis. The analyses of the results of this research indicate that investment philosophies, in the context of corporate carbon disclosure, are fundamentally irrelevant in the microenvironment. The researcher had assumed that every investor has the main objectives of protecting and preserving capital, minimising risk and growing financial returns. Since investors operate in the same markets, their variant philosophies were found to be irrelevant in the market place, while highly relevant in their private analysis of specific company and share investments.

To this end, the researcher considers that the objectives of the research in Chapter 1 have been met through the conclusions of Chapter 2 and Chapter 5, in accordance with the methodology in Chapter 4.

## 6.3 Result Themes

### 6.3.1 Theme 1: The Evolution of Commercial Thinking in terms of Carbon Emissions and Subsequent Disclosure

The results and analyses in Chapter 5 have shown that there is a growing trend of investor and company awareness in and concern for climate change and business sustainability.

This concept of emerging awareness of the issues surrounding climate change was also identified by Berridge and Cook (2009), where they deduced that there has been greater demand, and associated support for shareholder resolutions with regard to issues surrounding climate change. This has enabled the researcher to determine that the SRI-focused investment community is growing and becoming more powerful in prescribing financial, operating and disclosure standards, which was confirmed by the responses of both Sub-Sample 1 and Sub-Sample 2. Additionally, Walker (2008) and Monterio (2010) suggested that investors are increasingly demanding greater transparency with regard to company responses to climate change through carbon disclosure, which was confirmed by the responses of Sub-Sample 1. The institutional fund managers explained that greater carbon related transparency provides for more accurate valuations of investments, especially in the cases of high carbon impact industries. One may question the proposed strength of the investment community's preference in this regard. However, according to Kolk *et al.* (2008), carbon disclosure is a voluntary action of companies and is borne from civil society.

It should be noted that the practical implications of this proposed strength were confirmed by Berridge and Cook (2009), where they found that the largest and most powerful mutual funds in the American context have reacted positively through focusing on carbon disclosure and subsequently begun to adapt to the new dynamic and transparent commercial environment. Additionally, similar analysis was drawn from the 2009 CDP Report on South Africa, where 68 percent companies responded to the CDP questionnaire, 10 percent increase from the previous year (<http://www.cdproject.net>). This shows that

there has been a significant increase in commercial awareness of the importance of climate change and carbon disclosure in the South African context.

Cashore *et al.* (2004) explained that investors have become more aware of carbon risk, thus demanding more proactive action from companies. The research findings of this particular dissertation have agreed with Cashore's *et al.* hypothesis (2004). The findings of Cashore *et al.* (2004) were also consistent with those found by Kolk *et al.* (2008) with regard to investors becoming more knowledgeable about the risks associated with climate change.

Upon analysis of the interview responses, the interviewees have tended to associate the issues surrounding climate change and sustainability with their investment decisions. Additionally, according to the semi-structured interview results in Chapter 5, investors are beginning to associate environmental performance of companies with competitiveness and future financial performance. These findings were also present in the analysis of Debono (2005), who identified that there is a correlation between the environmental awareness of companies and market performance, identical to the research findings in this report (Debono, 2005).

Ball (2006) explained that the ratification of carbon associated issues with reference to climate change calls for the integrated responses between companies and investors. The company representatives that were interviewed from Company A, Company B and Company C have witnessed an enhanced organisational focus on sustainability in light of climate change. Additionally, the company representatives displayed a positive awareness



of the emerging preferences of investor community and explained that each of the three companies have responded favourably towards climate change. The three company representatives interviewed explained that the investment market is changing rapidly, and that carbon disclosure is the start of the new process, at least with regard to climate change.

Hamel and Prahalad (1994) explained that the changing environment is being driven by new environmental standards (which are being dictated by civil society), new levels of public disclosure, the changing requirements of consumer confidence and codes of business conduct and ethical considerations. These drivers were confirmed by the results presented in Chapter 5. Buysse and Verbeke (2003) explain that the beginning of rectifying climate change in the commercial environment begins with the disclosure of those operational aspects that affect (or are affected by) climate change.

Certain interviewees from Sub-Sample 1 felt that the issue of climate change will only tangibly materialise in many years to come. It is one of the commercial issues surrounding climate change that action or inaction taken now will only affect the global environment in a few decades' time. Despite this inter-generational concern, more and more companies and investors are subscribing to initiatives such as the CDP, INCR, Global Reporting Initiative (GRI) as well as listing on SRI focussed market indexes (Berridge and Cook, 2009)(Antoni and Hurt, 2006). These companies are subscribing to the belief of the general market that carbon emissions are a concern. They are thus re-strategizing in line with the Dow Jones Sustainability Index definition of sustainability (see Chapter 2). This trend of sustainability in line with the Dow Jones Sustainability Index definition is apparent in the

investor and company sub-samples' responses in this paper (<http://www.dowjones.com>). According to Wildsmith (2008), long-term investment strategies have changed in light of climate change and carbon disclosure.

## **Conclusion**

The above discussion of the research results shows us that there has indeed been a positive shift on both investor and company fronts in the evolution of commercial thinking with regard to carbon disclosure and climate change in the South African context.

This conclusion confirms that the relationship outlined by Ball (2006) does in fact hold in the South African context. Additionally, the integration of the Companies Bill (Section 66(1), Companies Bill, 2008), King III Report (King, 2009) and the draft of the Institutional Shareholder Code for Responsible Investing (Bonorchis, 2010) confirm the responsibility shared relationship of both investors and companies.

There may be concern about the conclusions drawn from the sub-samples in this paper with regard to the interviewees' honesty and objectivity, in line with the potential biases listed in Chapter 4. Despite this concern, their responses were in fact aligned with the research literature. There may be similar concern that the company attitudes of Sub-Sample 2 are limited to those from the oil and gas industry, which are carbon-intensive by nature. Nevertheless, again, the company responses are aligned to the information in the literature review.

### 6.3.2 Theme 2: The Relevance of Disclosing Carbon Emissions

Epstein (2008) highlights the long-term importance of general disclosure and communication with investor decision-making. The purpose of this paper was to develop a similar understanding specifically in terms of carbon disclosure in the South African context. The researcher has found that carbon disclosure does in fact have an impact on investor decision-making. Additionally, the researcher has found that carbon emission-focused information has become increasingly pertinent in times of environmental crisis, as similarly indicated by Kaufmann *et al.* (1994). Kaufmann *et al.* (2004) explain that the disclosure, such as that of carbon emissions, is vital to establish investor confidence in a company's ability to manage risk efficiently and effectively through times of crisis. Monterio (2010) describes a shift in the attitudes of investors, where they are more interested in non-financial aspects than ever before. He explained that this interest is borne out of civil demands on the investment community. This is confirmed by the analyses of the results in Chapter 5.

It should be noted, that the fund managers interviewed were concerned that the disclosure of non-financial elements such as carbon disclosure may influence company and share price valuations in the short-term, given the difficulty in assigning monetary values to the associated investment community's sentiments in this regard. The investors and company representatives that were interviewed believed that the media has a powerful impact and influence on valuations of both companies and shares, but that this will ultimately be regulated in the long-term. The investors expected such knee-jerk impacts to settle in the long-term. These insights concur with the conclusions of Bangoj and Planberg (2000), who advised that the ESG issues may have a detrimental impact on an analyst's ability to

provide objective valuations as well as an investor's ability to determine appropriate investments. This, according to the various interviewees, is the foundation reasoning for government legislation which would force the standardisation of company practices, and thereby allow for more understandable and objective company and share price valuation techniques.

Kaufmann *et al.* (1994) explained that carbon disclosure, despite valuation confusions, will increase investor-confidence and thereby the tradability of investments. This concept became evident in the interviews, particularly amongst the individual investors and fund managers, where they value companies that exhibit actions that are consistent with the good morals demanded by society. This was consistent with the research findings of Kolk *et al.* (2008), where they found that investors were attracted to companies that are seen to be moral in their approaches to business dealings.

In the case of Company A, and certain members of the investor sub-sample, climate change was seen as a generational issue that will only become practically pertinent in the long-term. Upon analysis of the results in Chapter 5, the above claims were seen to be poor justifications for investment decisions when concerned with tradability and ease of continuation of investments thereby enabling investors to convert investments to cash relatively effortlessly. It is noted that additional information disclosed by a company is a factor in the determination of an investment's tradability and ease of continuation.

Amarlic and Hauser (2005) found that the disclosure of non-financial elements such as carbon emissions would enhance the reputation of a given company, thus developing long-

term investor confidence. Investor-confidence, with relevance to this paper, is considered a factor in an investor's decision-making.

Vander (2004) researched the emerging investment in factors that were seen to be non-financial by nature. It was found that investors were increasingly investing as a response to factors other than financial performance, which is confirmed by the investor sub-sample responses in Chapter 5. These findings are consistent with those found by Debono (2005) where investments should be considered in more holistic manners, rather than solely quantitative manners in order to realise positive long-term return on investments.

## **Conclusion**

The researcher concluded that carbon disclosure would have a positive effect on the reputation of a company, and thereby the tradability and ease of liquidation of investments.

### **6.3.3 Theme 3: The Association of Risk and Sustainability**

Berridge and Cook (2009) explained that mutual funds are finding themselves in positions where they are forced to consider the acceptance of shareholder resolutions. This trend is evident in the increases in response rates of South African companies to the CDP (<http://www.cdproject.net>). In joining networks such as CDP and the INCR, companies are sending positive signals to the market yielding stronger investor interest by catering for the broader market (<http://www.cdproject.net>)(Walker, 2008)(Berridge and Cook, 2009).

Bader (2006) and Rosenberg (2009) explained how carbon disclosure will generate future success through the attraction of additional investors, thereby decreasing downside risk and fostering short-term tradability, and providing investors with simple conversion of investments into cash. This suggests that investment liquidity would arise as a result of the increased demand because of carbon disclosure.

According to Kaufmann *et al.* (1994) and Dubbink *et al.* (2008), carbon disclosure does not come without downside risks. According to the investor sub-sample and the company sub-sample interviews in Chapter 5, the disclosure may negatively affect pricing valuations, through the media's possible sensationalising of the issues surrounding climate change. It seems that when negative information and events are filtering into the long-term valuations of companies and their shares, it may be more appropriate for investors to rely on a more quantitative investment philosophy.

Despite the context highlighted in the above paragraph, Cogan (2006) explained that companies may pursue opportunities to gain competitive advantage through the implementation of strategies concerning and ratifying climate change through carbon disclosure. Cogan (2006) explained that this opportunistic approach has increasingly been adopted by companies within industries that have been intensely scrutinised on their carbon-associated activities. This concept became increasingly evident in the research of Berridge and Cook (2009) and Walker (2008), where mutual funds and companies were said to establish the ability to gain additional competitive advantage in recessionary times.

The information collected in Chapter 5 has enabled the researcher to classify the three companies interviewed into the following classes identified by Tankha (1999) (introduced in Chapter 2):

1. Inactive
2. Reactive
3. Preactive
4. Proactive

According to the research findings, Company A can be profiled as inactive with regard to sustainability and climate change. Whilst the Company A representative claimed that the company would provide carbon emission information if requested, the company is not actively filtering this information into the market place on a consistent basis. Company A seems to subscribe to the *“business as usual philosophy”* (Kessel, 1999).

Whilst Company B and Company C exhibited disclosure and operating trends associated with proactive companies, it was difficult to determine whether they are in effect proactive with regard to sustainability. The researcher came to this conclusion because the various respondents seem to feel that it is the investment communities that are specifically demanding positive environmental action with regard to climate change. Two company representatives (Company B; Company C) differentiated between two apparent investor communities; the minority group that are SRI-focussed and demand carbon disclosure, and the majority group who are relatively apathetic towards the association of climate change and commerce, and thus are more focused on financial performance only. However, the

results presented from Sub-Sample 1 translate into the broad investor market demanding proactivity and carbon disclosure.

Vyvyan, Ng and Brimble (2007), explained that catering for separate markets may cause lost opportunities for a company in attracting further investment. According to Amarlic and Hauser (2005), carbon disclosure should enhance both Company B and Company C's reputations in the market place if they cater for the full investor community. However, both companies, according to the results from the interviews, exhibited forward-looking tendencies with regard to financial, operational, equipment and disclosure based processes.

#### **6.3.4 Theme 4: The Emerging Market of Socially Responsible Investors**

Cashore *et al.* (2004) proposed that there is an emergence of accountability from companies to investors. This concept is confirmed by the regulatory advancements in the King III Report (King, 2009), the draft of the institutional Shareholder Code for Responsible Investing (Bonorchis, 2010) and the new Companies Act (Section 66(1), Companies Act, 2008). These authorities have forced companies to align new practices and enhanced disclosure. Indirectly, this means that companies are becoming increasingly socially responsible because of added regulation. In turn, investors would be making a more socially responsible choice when investing in them.

### **Conclusion**

It may be concluded that the investor community is in fact socially responsible in its investing decisions. This deduction was made possible through the analysis of the

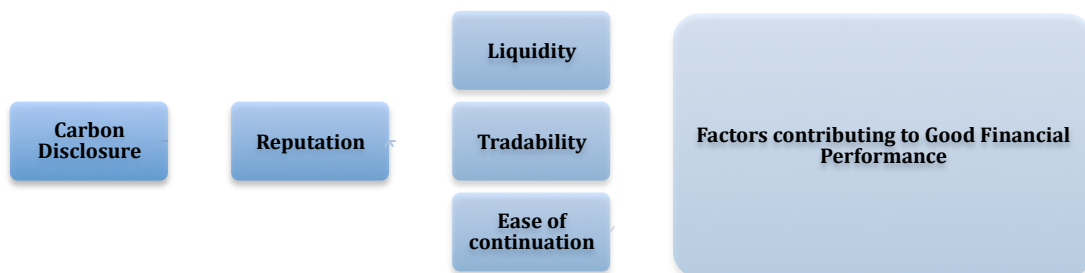


company representatives’ responses as well as through the analysis of the implications of the current and proposed regulation policies mentioned above and in Chapter 2 of this paper.

The researcher had assumed in the analyses in relation to Sub-Sample 1, that investors prefer investing in instruments that are easily tradable and liquid, from an investment protectionist perspective. If investors subscribe to these investment requirements, they will by implication be seen as socially responsible as they would be investing in instruments that cater for broad markets, including those investment communities that are SRI focussed. In this way, investors become stakeholders of each other, and are vulnerable to market and company fluctuations, as well as to the emergence of enhanced investor preferences that filter through into the market place.

#### 6.4 Discussion of Results Conclusion

FIGURE 2: THE IMPACT OF CARBON DISCLOSURE ON LIQUIDITY, TRADABILITY AND REPUTATIONAL ASPECTS



The researcher found that investors are all purposefully or indirectly socially responsible in their investments, under the assumption that investors prefer investments that are easily tradable and liquid.

These circumstances should enhance the reputation of companies in the market place and will be vital in gaining shareholder confidence, competitive advantage and long-term satisfaction of investors through positive financial performance. This conclusion applied to Company B and Company C. In the case of Company A, socially responsible practices and appropriate disclosure would be relevant in attracting appropriate partners in the various projects that they undertake.

The above model, proposed by the researcher, may be viewed as a reliable indication of the relationships proposed in Figure 5.1 as they are in line with both the research findings and the literature presented.

The requirement for the working of this model is that a company discloses the true relevant information to the investor market place, in terms of the legitimacy theory, in order to gain a positive reputation, as explained by Bansal and Clelland (2004), Ashforth and Gibbs (1990) and Ashforth and Fiol (1994).

One may initially express concern over the reliability of the sub-samples researched in this paper in concluding with the model proposed above. Given that the methodology of the research findings was designed primarily to gain insights from semi-structured interviews, the potential biases of honesty and subjectivity may have skewed the results. Nevertheless, the proposed model is supported by the appropriate literature found in

Chapter 1 and Chapter 2 of this paper, and the potential bias is thus rendered of little concern.

Additionally, the prior global research agrees with this model, and they cumulatively support the research proposition stating that **there is a positive impact on investor decision-making attitudes as a result of carbon disclosure.**

## Chapter 7 - Conclusion

### 7.1 Introduction

The purpose of this research study was to determine whether or not there is an impact on investor decision-making as a result of the disclosure of carbon emissions by companies.

The researcher undertook an exploratory research approach under the analytic induction procedure, as outlined in Chapter 4. This method was most appropriate according to Saunders *et al.* (2009).

Under the above approach to the research, the researcher developed applicable interview schedules (Appendix A; Appendix B) and conducted semi-structured interviews with samples representative of the investor and company communities (Sub-Sample1; Sub-Sample 2, Table 1: Sample Structure).

The results of these interviews were presented and analysed in Chapter 5 and reanalysed in Chapter 6 in reference to the theoretical perspectives provided in Chapter 2.

The researcher was able to deduce relevant findings from the Sample in the context of the scope of this study, which are summarised in the subsequent paragraphs of this chapter.

### 7.2 Research proposition

The researcher developed the following proposition in Chapter 3:

**There is a positive impact on investor decision-making attitudes as a result of carbon disclosure.**

The questions developed in the interview schedule (Appendix A; Appendix B) were constructed in terms of this proposition.

The researcher deduced, from the findings in Chapter 5, that the research proposition was in fact true for the Sample used (Sub-Sample 1; Sub-Sample 2) and within the context of the research problem, explained in Chapter 1.

This problem addressed the issues of climate change and carbon disclosure in terms of Kessel's (1999) study. The terms were defined and explained in the international and South African contexts. This research problem, on a basic level, stated that there has been an emergence of carbon dioxide considerations in a global context, but that there was little knowledge about the South African investor community. The researcher undertook to contribute academic knowledge about the phenomenon on a South African level.

### **7.3 Summary of Research Findings**

From the analysis of the semi-structured interview results in Chapter 5, and the comparisons to past literature of the emerging research themes in Chapter 6, the researcher was able to support the research proposition outlined in Chapter 3. The researcher found that there is a positive impact on investor decision-making through the disclosure of carbon emissions by companies.

A relevant conclusion was developed through gaining a general understanding of the South African general market preferences regarding carbon disclosure.

The final analysis was drawn from the analytic induction method, detailed in Chapter 4. This choice was based on a series of assumptions made throughout the paper as well as on the applicable research. With regard to investors' investment preferences, the researcher assumed that investors seek to purchase and sell financial instruments that cater for:

1. liquidity of shares;
2. tradability of shares;
3. ease of continuation of investments; and
4. reputation (Bader, 2006, Rosenberg, 2009, Ashforth and Gibbs 1990, Lundolm and Van Winkle, 2006).

The researcher adopted these assumptions upon analysis of the various fund managers responses in the semi-structured interviews in Chapter 5.

#### **7.4 Research Shortcomings**

The researcher chose to interview companies from the oil and gas industry only. The reason for this was to gather relevant information from a commercial context that is responsible for the highest carbon emissions (directly and indirectly) when compared to other industries globally (<http://www.epa.gov>).

However, it should be noted that there is the possibility that the companies interviewed, while they are representative of this particular industry in South Africa, are not necessarily representative of all carbon-emitting industries in South Africa. Despite this possible drawback, the researcher explained and proved that there is an emergence of sustainable

thought in investment across the Sub-Sample 1 market, which was said to be representative of the broader South African investor community.

The Sample population that was used consisted of a total of 9 respondents: 2 individual investors; 4 fund managers; and 3 investor relations officers of companies in the petroleum industry. It would always have been possible, beneficial and statistically relevant to investigate further investors and fund managers in addition to those of Sub-Sample 1; but Sub-Sample 1 was still sufficient to reliably prove the proposition of this paper. While the sample selected for Sub-Sample 2 (companies) offered statistically relevant information for research analysis, a larger sample would have been possible to support the qualitative research with quantitative data; however, the local industry is focused in few hands and some of those entities not investigated in this paper are not publically traded in South Africa, rendering their value to this paper less helpful.

It should be noted, that at the time of the research undertaking, the world community had become aware of a certain environmental crisis involving a particular global petroleum company that operates in the oil and gas industry. This context was coupled with the investment and environmental impact of the global economic recession of 2007.

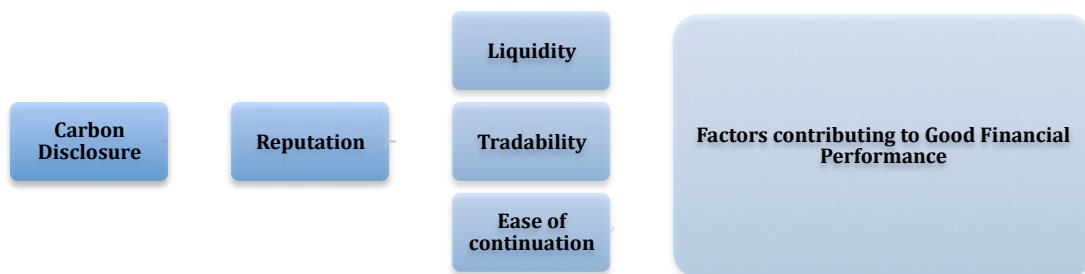
## **7.5 Implications for Companies**

This paper has developed further theory around the concept of carbon disclosure that is highly pertinent to all companies with regard to reputation enhancement, and consequent positive performance.

The researcher found that companies may distinguish themselves positively in the long-term through the disclosure of carbon emissions.

Companies' long-term sustainability should flourish from carbon disclosure, as the admissions should send positive signals to the market generating long-term shareholder confidence in the sustainability of their investments. This statement was realised through the development of the flowing model in Chapter 5:

FIGURE 2: THE IMPACT OF CARBON DISCLOSURE ON LIQUIDITY, TRADABILITY AND REPUTATIONAL ASPECTS



The model depicts that the disclosure of carbon emissions of companies would result in investment liquidity, tradability and reputation enhancement, thus making carbon disclosure subscription more attractive in the marketplace which would yield positive financial performance in the future.

Companies should consider the above model for the procurement of heavy equipment, waste and by-product management, large construction projects and logistics of companies. They should consider the carbon impact of the utilisation and disposal of the of the machinery, product and process instruments in the short and long terms.



## 7.6 Implications for Investors

The findings of this research suggest that there is a correlation between investment performance and socially responsible investment (SRI).

The above statement was confirmed through the results of Chapter 5, where the researcher determined that it is in the investors' best interest to devote funds to investments that exhibit good corporate governance through tools such as carbon disclosure. The reason for this is that the broadest investor demand would ensure the ease of tradability, and thereby liquidity, and the most efficient protection of capital. This approach would be most suitable for risk-averse investors, rather than those that are more contrarian in their approaches. However, it should be noted that long-term investments are generally considered conservative.

This research shows that investors may find strong performing and sustainable investments through the identification of companies that disclose their carbon emissions. They should increasingly stress the importance of non-financial performance as such in order to preserve and protect their capital investments in order to ensure liquid shares that are tradable in the future.

## 7.7 Future Research

Future researchers should consider the legitimacy issues of carbon disclosure from both qualitative and quantitative perspectives. These topics should yield additional knowledge about the importance of carbon emissions and legitimacy in terms of the strategic legitimacy research hypotheses by Bansal and Clelland (2004), Aldrich and Fiol (1994) and

Ashforth and Gibbs (1990). This research would assist companies and investors in determining sincere and appropriate long-term perspectives of companies and investors with regard to climate change. Future researchers may consider conducting a case study research approach to determine the drivers that contribute to environmental legitimacy in specific industries.

Future researchers should consider the importance and weightings of each of the non-financial performance measures that investors consider to be criteria in decision-making. It would also be interesting to consider this topic in the context of an array of industries to assess the importance of each non-financial performance measure relative to the others.

Future researchers should consider analysing the results of this research on a comparative basis with a more progressive and developed country, and perhaps with other developing countries to determine how South Africa compares to countries with similar profiles.

Future research may entail the identification of the most appropriate carbon disclosure initiative for companies to subscribe to, in attaining the most enhanced financial performance. The researcher may consider a multi-contextual analysis to determine the possibility of one initiative being more profitable than another.

Future researchers should consider executing a study on the extent to which carbon disclosure should be conveyed to the public before it becomes detrimental to the company. The researcher may choose to make use of the legitimacy theory submitted by Ashforth and Gibbs (1990) to assess legitimacy destruction.

Future researchers may also consider relating the material provided to the public relations industry, by providing an applicable and modern approach to formal and informal disclosure in times of corporate crisis.

## **7.8 Conclusion**

The purpose of this paper was to determine the impact of corporate carbon disclosure on investor decision-making attitudes. As such, the research problem was identified in Chapter 1, and was supported in Chapter 2 with relevant academic theory. The proposition the of carbon disclosure on investors decision making was defined in Chapter 3. The results were collected via semi-structured interviews in Chapter 5, according to the research methodology in Chapter 4, and subsequently discussed in terms of the theory in Chapter 6.

As such, the research objectives have been met and critically analysed in the most appropriate, reliable and valid fashion.

The analysis of the research results has contributed relevant theory to the decision-making processes of investors in South Africa.



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## References

- Aldrich, H. E., and Fiol, C. M. (1994). Fools rush in? the institutional context of industry creation. *Academy of Management Review*, 19(4), 645-670.
- Amalric, F., and Hauser, J. (2005). Economic drivers of corporate responsibility activities. *Journal of Corporate Citizenship*, (20), 27-38.
- Antoni, M., and Hurt, Q. (2006). Applying the global reporting initiative (GRI) for public bodies in the south african context: The eThekweni experience. *Development Southern Africa*, 23(2), 251-263. doi:10.1080/03768350600707520
- Ashforth, B. E., and Gibbs, B. W. (1990). The double-edge of organizational legitimation. *Organization Science*, 1(2), 177-194.
- Bader, E., and Smith, K. (2006). European hotel industry performance 2005. *Journal of Retail and Leisure Property*, 5(3), 247-252. doi:10.1057/palgrave.rlp.5100027
- Ball, R. (2006). International financial reporting standards (IFRS): Pros and cons for investors. *Accounting and Business Research*, 36, 5-27.
- Banghøj, J., and Plenborg, T. (2008). Value relevance of voluntary disclosure in the annual report. *Accounting and Finance*, 48(2), 159-180. doi:10.1111/j.1467-629X.2007.00240.x
- Bansal, P., and Clelland, I. (2004). Talking trash: Legitimacy, impression management, and unsystematic risk in the context of the natural environment. *Academy of Management Journal*, 47(1), 93-103.

Baron, D. P. (2003). Private politics. *Journal of Economics and Management Strategy*, 12(1), 31-66. doi:10.1162/105864003321220724

Bebbington, J., and Larrinaga-Gonzalez, C. (2008). Carbon trading: Accounting and reporting issues. *European Accounting Review*, 17(4), 697-717. doi:10.1080/09638180802489162

Beretta, S., and Bozzolan, S. (2008). Quality versus quantity: The case of forward-looking disclosure. *Journal of Accounting, Auditing and Finance*, 23(3), 333-375.

Bonorchis (2010). *IoD - the southern african chapter of the institute of directors* Retrieved 11/3/2010, 2010, from [http://www.iodsa.co.za/products\\_reports.asp?CatID=362](http://www.iodsa.co.za/products_reports.asp?CatID=362)

Briscoe, F., & Safford, S. (2008). The nixon-in-china effect: Activism, imitation, and the institutionalization of contentious practices. *Administrative Science Quarterly*, 53(3), 460-491.

Brundtland, G. H. (1987). Presentation of the Report of the World Commission on the Environment and Development to UNEP's 14th Governing Council Session. *World Commission and Environment and Development*, (pp. 1-16). Nairobi, Kenya.

Buyse, K., & Verbeke, A. (2003). Proactive environmental strategies: A stakeholder management perspective. *Strategic Management Journal*, 24(5), 453. doi:10.1002/smj.299

*Carbon dioxide - human-related sources and sinks of carbon dioxide | climate change - greenhouse gas emissions | U.S. EPA* Retrieved 11/4/2010, 2010, from [http://www.epa.gov/climatechange/emissions/co2\\_human.html](http://www.epa.gov/climatechange/emissions/co2_human.html)

Cashore, B., Auld, G. and Newsom, D. (2004) *Governing through Markets* (New Haven, CT: Yale University Press).

Cogan, D. G., Investor Responsibility Research Center, & Coalition for Environmentally Responsible Economies. (2006). *Corporate governance and climate change: Making the connection* Ceres Boston, MA.

Crotty (2010) *South africa plans to encourage investor activism, business report says - bloomberg* Retrieved 11/3/2010, 2010, from <http://www.bloomberg.com/news/2010-09-02/south-africa-plans-to-encourage-investor-activism-business-report-says.html>

Dana, L. P., & Dana, T. E. (2005). Expanding the scope of methodologies used in entrepreneurship research. *International Journal of Entrepreneurship and Small Business*, 2(1), 79-88.

DeBono, T. (2004). Integrating sustainability practices into power generation operations. *Greener Management International*, (46), 73-86.

Della Porta D, Diani M. 2006. *Social Movements: An Introduction* (2<sup>nd</sup> edn.). Blackwell: Malden, MA

den Hond, F., and de Bakker, Frank G. A. (2007). Ideologically motivated activism: How activist groups influence corporate social change activities. *Academy of Management Review*, 32(3), 901-924.

Dubbink, W., Graafland, J., and Liedekerke, L. (2008). CSR, transparency and the role of intermediate organisations. *Journal of Business Ethics*, 82(2), 391-406. doi:10.1007/s10551-

008-9893-y

EPA proposes national reporting system for greenhouse gases. (2009). *Chemical Engineering*, 116(4), 22-22.

Epstein, M. J., & Books24x7, I. (2008). *Making sustainability work: Best practices in managing and measuring corporate social, environmental and economic impacts* Greenleaf.

Guyatt, D. (2005). Meeting objectives and resisting conventions: A focus on institutional investors and long-term responsible investing. *Corporate Governance*, 5(3), 139-150.

Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of Management Review*, 20(4), 986-1014.

IPCC (2007). "Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)". IPCC, Geneva, Switzerland.

Johannesburg Stock Exchange: SRI: Available from:  
<http://www.jse.co.za/Home/ContactTheJSE.aspx>. (Retrieved 05, 3, 2010, from [www.jse.co.za](http://www.jse.co.za))

Johnson, L. (2009). The inconvenient truth. *Accountancy*, 143(1387), 22-22.

Kaufmann, J. B., and Kesner, I. F. (1994). The myth of full disclosure: A look at organizational communications during crises. *Business Horizons*, 37(4), 29.



Kessel, D. G. (2000). Global warming — facts, assessment, countermeasures. *Journal of Petroleum Science and Engineering*, 26(1-4), 157-168. doi:DOI: 10.1016/S0920-4105(00)00030-9

King Committee on Corporate Governance, and Institute of Directors. (2009). *King report on governance for south africa 2009*. Sandton, South Africa: Institute of Directors of Southern Africa.

Kolk, A., Levy, D., and Pinkse, J. (2008). Corporate responses in an emerging climate regime: The institutionalization and commensuration of carbon disclosure. *European Accounting Review*, 17(4), 719-745. doi:10.1080/09638180802489121

Lundholm, R., and Van Winkle, M. (2006). Motives for disclosure and non-disclosure: A framework and review of the evidence. *Accounting and Business Research*, 36, 43-48.

McFarland, J. M. (2009). Warming up to climate change risk disclosure. *Fordham Journal of Corporate and Financial Law*, 14(2), 281-323.

Monterio, B. J. (2010). Sustainability reporting and XBRL--part 1. *Strategic Finance*, 92(2), 56-58.

Neil Adger, W., Arnell, N. W., and Tompkins, E. L. (2005). Successful adaptation to climate change across scales. *Global Environmental Change Part A*, 15(2), 77-86. doi:DOI: 10.1016/j.gloenvcha.2004.12.005

Polonsky, M. J., and Scott, D. (2005). An empirical examination of the stakeholder strategy matrix. *European Journal of Marketing*, 39(9), 1199-1215. doi:10.1108/03090560510610806

Prahalad, C. K., and Hamel, G. (1996). *Competing for the future*. *Harvard Business School Press Books*, , 1.

Reid, E. M., and Toffel, M. W. (2009). Responding to public and private politics: Corporate disclosure of climate change strategies. *Strategic Management Journal*, 30(11), 1157-1178.

Required financial statement disclosure. (2009). *International Financial Law Review*, , 29-44.

Rosenberg, J. (2009). Sustainable development. *Journal of Property Management*, 74(3), 42-47.

Saunders, M. Lewis, P. and Thornhill, A. (2009) *Research methods for business students* (5<sup>th</sup> ed.). England: Pearson Education Limited

Super, D. A. (2010). From the greenhouse to the poorhouse: Carbon-emissions control and the rules of legislative joinder. *University of Pennsylvania Law Review*, 158(4), 1093-1197.

Sweeney, P. (2010). Will 2010 be the 'year of the shareholder?'. *Financial Executive*, 26(1), 48-51.

Tankha, S. (1999). *Sustainable Corporations: Reconciling Wealth Creation with Global Sustainability*. Houston Advanced Research Center. Center for Global Studies.

Vander, L. (2004). The keys to strategic investing. *Real Estate Finance* (Aspen Publishers Inc.), 21(4), 27-32.

Verbeke, A, Sellers, M, and Bowen F. (2009). Greening and Competitive Advantage: An Empirical Analysis of the Canadian oil and gas industry. *Paper presented at the 2009 Academy of Management Conference, Chicago, August 2009.*

Vyvyan, V., Ng, C., and Brimble, M. (2007). Socially responsible investing: The green attitudes and grey choices of Australian investors. *Corporate Governance: An International Review*, 15(2), 370-381. doi:10.1111/j.1467-8683.2007.00567.x

Walker, D. (2008). Sustainability: Environmental management, transparency and competitive advantage. *Journal of Retail and Leisure Property*, 7(2), 119-130. doi:10.1057/rlp.2008.4

*What are carbon emissions? | the carbon account* Retrieved 11/3/2010, 2010, from <http://www.thecarbonaccount.com/carbonexplained/>

Wildsmith, H. (2008) South Africa's largest public sector pension funds: a collective development role? *Corporate Ownership and Control*, 5(3) 139-158.

*World-class publisher of business and financial newswires, indexes, newspapers and magazines - dow jones* Retrieved 11/6/2010, 2010, from <http://www.dowjones.com/>

**Note:** The sources of the company profiles for Company A, B and C in Chapter 4 have not been disclosed in this paper for confidentiality and ethics reasons. Therefore, in not declaring these sources, the researcher is not claiming the content of the company profiles as entirely his own; but rather as assisted by reliable, authoritative references.

## Appendices

### Appendix A – Semi-structured Interview Schedule for Individual Investors and Fund Managers

1. Are you familiar with the concept of sustainability? Could you provide me with your understanding in reference to the definition and its impact on climate change?
2. Do you consider any non-financial aspects of a company's financial statements relevant? Which ones?
3. Do you consider non-financial aspects to be associated with positive future financial performance?
4. What is your attitude towards carbon disclosure in selecting investments? Do you have a particular stance, especially with regard to high carbon impact industries?
5. What is your risk profile? (conservative – maverick)
6. Are you short-term or long-term orientated with regard to your investment decisions? (according to your fund management mandate)

### Appendix B – Semi-structured Interview Schedule for Petroleum Companies

1. Has the emergence of sustainability concepts such as carbon disclosure become increasingly pertinent to your organisation?
2. What is your company's disclosure policy with regard to carbon emissions?
3. Would you consider the issue of sustainability to be important in your investors' investment decision-making criteria?
4. Are your investors long or short term orientated?
5. Do you consider your investors socially responsible in their investing decisions?

6. To what extent do you disclose carbon-associated activities? And in what way do you communicate this information to your investors?