REPORTING ON CARBON EMISSIONS: CORPORATE STORIES OF IMPLEMENTATION, MOTIVATION AND CHALLENGE IN THE AGE OF CLIMATE CHANGE

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THESIS SUMMARY

The main purpose of this research is to investigate the climate change and carbon reporting practises of UK FTSE 350 companies. The objectives cover three main areas of investigation including the extent of carbon reporting in the first mandatory year as compared to a voluntary year; the common stories told in companies' climate change and carbon disclosure; and the dynamic of carbon reporting implementation, including the motivations for disclosure, the problems and issues faced and the disclosure implementation approach. Using storytelling as a theoretical lens, this research explore the content of disclosure, presentation and the motivation for disclosure using the storytelling concept. The data for this study was gathered through two sources: companies' disclosure in annual reports, sustainability reports, websites and other online reporting; as well as interviews. The findings reveal that the introduction of Mandatory Carbon Reporting Requirements (MCRR) does improve the content and presentation of the companies' carbon disclosure in annual reports, thus fulfilling the objective of the legislation in encouraging reporting and promoting transparency. The study has also found that the common story themes reported in companies' disclosures relate to stories of climate change, emissions performance and reduction, and companies' achievements in climate change and related areas. The findings of the study also demonstrate that maintaining a good reputation, complying with regulation, fulfilling stakeholders' expectation, improve efficiency and cost saving, and projecting morality of management are the main motivations for climate change and carbon disclosure. It was also found that data collection and accuracy are perceived to be the most challenging issues faced by companies in disclosing their emission data, especially if they operate internationally. Last but not least, the findings show that companies will consult or choose to outsource their carbon disclosure or data collection to third parties when they do not have sufficient in-house resources and expertise.

Key words: carbon, emission, Greenhouse Gas (GHG), carbon reporting, storytelling

DEDICATION

This work is dedicated to The Most Merciful Allah and my beloved family and friends; for without their assistance, I may not reach this destination.

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First of all, I would like to express my gratitude to the Almighty and the Most Merciful for without His blessing I would not be able to achieve what I have today. I am so grateful that I can always depend on You as You always listen to my prayers, anytime and anywhere. Indeed, You are the best Helper of all.

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LIST OF ABBREVIATION

CCC	Climate Change Committee
CDP	Carbon Disclosure Project
CDLI	Climate Disclosure Leadership Index
CDSB	Carbon Disclosure Standard Board
CPLI	Climate Performance Leaders Index
CSR	Corporate Social Responsibility
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
FRC	Financial Reporting Council
GHG	Greenhouse Gas
GRI	Global Reporting Initiative Guidelines
IEMA	Environmental Management and Assessment
IIGCC	Institutional Investors Group on Climate Change
IPCC	Intergovernmental for Climate Change
LSE	London Stock Exchange
MCRR	Mandatory Carbon Reporting Requirement
WBCSD	World Business Council for Sustainable Development
WRI	World Resources Institute
UK ETS	UK Emissions Trading Scheme

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CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

This chapter provides the overall outline of the thesis, covering the background, motivation, aims, research questions and the objective of the study. Further, the chapter also discusses the contribution of the study and summarises the research methods employed in carrying out the research. This chapter concludes with a summary of all chapters included in this thesis.

1.2 CONTEXT OF THE RESEARCH

> ***"Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen."***
>
> *(IPCC, 2014)*[1]

Climate change is one of the greatest threats facing the world today. Increasing greenhouse gas concentration in the atmosphere is perturbing the environment to cause potentially, and perhaps inevitably, grievous global warming and associated consequences (Pandey, Agrawal and Pandey, 2011). In 2009, UK emissions of the basket of six greenhouse gases covered by the Kyoto Protocol were estimated to be 566.3 million tonnes carbon dioxide equivalent (MtCO2e). The emissions of carbon dioxide alone were estimated to be 473.7 million tonnes (Mt) (DECC, 2012). For the year 2014, Climate Change Committee (CCC) (2015) reported that the total UK emissions had reduced by 8% (to 520 MtCO2e) as compared to 2013, resulting in emissions that are 36% below 1990 levels. However, a concern was raised about whether this reflected significant progress in reducing underlying sources of emissions, or whether it was just a one-off event (CCC, 2015).

According to the Stern Review (2007), if we don't act, the estimated overall costs and risks of climate change will be equivalent to losing at least 5% of global GDP each year, now and forever. If a wider range of risks and impacts is taken into account, the estimates of damage could rise to 20% of GDP or more. Many have argued that

[1] SPM 1.1, Climate Change 2014 Synthesis Report Summary for Policymakers.

prevention is better than cure, since the costs of action (reducing GHG emissions to avoid the worst impacts of climate change) are anticipated to be only around 1% of global GDP each year (Stern Review, 2007). Consequently, for the first time in over 20 years of UN negotiations, the 2015 COP21, (also known as the 2015 Paris Climate Conference) aims to achieve a legally binding and universal agreement on climate by committing to try to keep global warming below 2°C[2]. In the latest development, the IPCC was invited by UNFCCC to produce a special report in 2018 on the impacts of global warming of 1.5ºC above pre-industrial levels and related global greenhouse gas emission pathways, and to prepare a Special Report on this topic. Following the receipt of the invitation, the Bureaux of the three Working Groups of the IPCC selected the experts to be invited to participate in a Scoping Meeting to be held at the World Meteorological Organization (WMO), in Geneva, Switzerland in August 2016 to develop the scope and outline of the Special Report[3].

A first step is to be able to measure and manage emissions. The mandating of the Mandatory Carbon Reporting Requirements (hereafter refers to MCRR) was the first step taken by the UK government in seeking to manage corporate carbon emissions. MCRR was announced by the UK's Deputy Prime Minister in June 2012, at Rio+ 20 Summit in Rio de Janeiro[4]. MCRR was planned to start in April 2013 but it was not until it was approved by the UK Parliament in August 2013. MCRR finally take effect on the 1 October 2013 and companies with reporting years ending on or after 30 September 2013 need to publish their first report under the mandatory requirement. It is hoped that MCRR will help the UK achieve its carbon targets. Under the Climate Change Act 2008 Act, the UK must reduce total GHG emissions by at least 80% below 1990 levels by 2050[5]. By setting the trajectory to 2020 and 2050 targets through carbon budgets, a clear, credible, long-term framework is provided for the move to a low-carbon UK economy, and give businesses and individuals the direction their role to play. Information on carbon emission is needed by the government for different purposes, such as to support emission trading schemes, where they exist; as a complement of domestic climate change policies, and to refine national GHG inventories (Kauffmann, Tébar Less and Teichmann, 2012). Hence, it is organization's duty to supply the

[2] http://www.cop21paris.org/about/cop21
[3] https://www.ipcc.ch/report/sr15/
[4] https://www.gov.uk/government/news/leading-businesses-to-disclose-greenhouse-gas-emissions
[5] https://www.theccc.org.uk/tackling-climate-change/the-legal-landscape/global-action-on-climate-change/

government with useful carbon emissions information which is reliable, relevant and timely, so that it helps the government in making useful decisions.

Before the introduction of MCRR, the UK companies were obligated to collect data and report on their emissions as part of the objective of improving energy efficiency. The following Table 1.1 provides a summary of the three main reporting requirements prior to the introduction of MCRR.

Besides government, other stakeholders are also interested in getting information about organizations' activities that have an impact on the environment and climate change. Robert Eccles, Professor of Management from Harvard University, during an interview with Ethical Corporation Chairman, Toby Webb highlighted that investors are keen to see more non-financial information in the annual report, especially those related to sustainability and climate change[6]. He added that beyond 2013, the mandatory reporting will spread gradually throughout the world.

It was evidenced that corporate disclosure in this area has a direct impact on companies' reputation (Abdullah and Abdul Aziz, 2013). Realising that reputation would impact their long-term investment and profit, more pressures are given by the investors to the organizations that they invest in to communicate their environmental and climate change impact and mitigation efforts (Lee, Park and Klassen, 2015). A study by Lee and Kim (2015) shows that financial investors and regulatory agencies are the most influential stakeholders for a company to adopt and implement climate change management practices (p. 14521). Beside stakeholders, companies also receive pressures from their supply chain organizations for the emission information as their customers' companies are calculating and including their Scope 3 emissions in their total emissions (Armstrong, 2011).

[6] https://www.greenbiz.com/news/2012/11/26/future-integrated-sustainability-reporting

Table 1.1: Summary of the main reporting requirements prior to the introduction of MCRR.

Source: DEFRA (2010, p. 11)

All these requirements are based on certain criteria, such as the total energy purchased or total emissions. For example, CRC requires large public and private sector organisations to report and purchase their emission allowance if (1) the company has had at least one half hourly electricity meter (HHM) settled on the half hourly market within the organisation in the qualification year, and (2) total supplies of qualifying electricity measured by a settled half hourly meter (SHHM) are equal to or greater than 6000 MWh in the qualifying year. Unlike the above requirements, MCRR are made compulsory to all LSE) listed companies; regardless of their total emissions and based on energy usage.

Beside these earlier requirements, some companies have been reporting their carbon emissions through voluntary mechanisms such as by participating in CDP. CDP was established in 2002 as “a coordinating secretariat for institutional investor collaboration on climate change” (CDP, 2003). In the first CDP report in 2003, 221 out of the 500 biggest companies around the world responded to the CDP questionnaires. Since then, the number of participants has continued to increase and now they have more than 5,500 companies disclosing emissions data to CDP, producing the world’s largest database of corporate environmental information including climate change (CDP, 2015). Kolk, Levy and Pinkse (2008 p. 741) argue that despite its success to

impressively increase the response rate, commensuration is still lacking both on the level of carbon disclosure reporting that CDP promotes as well as the more detailed process of carbon accounting. Another drawback of the CDP disclosure is that not all of the responding companies data are publicly available; as respondents have a choice of not to release it to the public (Zhang, Mcnicholas and Birt, 2012). In addition, the released data are not readily accessible to users since users need to register with CDP to be able to view the company's response (Cotter et al, 2011 p. 308). Until recently, CDP remains voluntary and not all companies provide a complete response to its survey.

This study is important as it seeks to understand the process and content of the climate change and carbon disclosure by FTSE 350 companies, in order to evaluate whether these disclosures meet the expectation of stakeholders. The research is also carried out at the right time, since the implementation of the MCRR is in its third year. A proper monitoring and assessment on the effectiveness on the MCRR is necessary for policy makers in improving its overall implementation. The discussion on the motivations of the study are covered in the subsequent section.

1.3 PROBLEM STATEMENT

"The first step towards managing carbon emissions is to measure them because in business what gets measured gets managed"

-Lord Adair Turner, Chairman, UK Financial Services Authority

Many companies and notably many FTSE350 companies proactively took initiatives to disclose their carbon emissions before the introduction of MCRR (Luo and Tang, 2012) through participating in CDP. The approach to enforcement that MCRR uses is the 'comply or explain' approach. Despite this soft enforcement approach, we believe that those companies who were previously voluntarily reporting this information will continue to report, and some new companies will take initiatives to comply fully with the regulation. On the other hand, some non-compliance cases are also expected.

In September 2009, DEFRA produced guidelines on voluntary carbon reporting, including the templates of how the carbon disclosure should be reported in annual reports. Immediately before MCRR was made mandatory in October 2013, a similar guideline was issued by DEFRA in July 2013; incorporating both voluntary and

mandatory guidelines for carbon reporting. The new guideline separated the mandatory and voluntary items, where a more detailed explanation is provided for the mandatory items including how to determine companies' first year reporting (based on companies' year end date of director's report). The new guideline also highlights the 'Comply and Explain' approach of the regulation, where any omission of material emissions should be explained in director's report. Nevertheless, the recommended supporting information to the emission data (which form the voluntary items) are the same for both guidelines (refer to Chapter 4).

Even though many companies have incorporated carbon disclosures in their annual reports voluntarily before the introduction of MCRR; it does not mean that the disclosure contents were following the guidelines. Some environmental researchers (such as Adams, 2004; Deegan and Rankin, 1996; and Criado-Jimenez et al, 2008) suggest that voluntary reporting lacks neutrality and objectivity, thus does not serve the demands of stakeholders. Consequently, compulsory reporting requirements may be an appropriate mechanism to enhance the quality of reporting. A research report published by Deloitte (2010), looking at how 100 UK listed companies publicly and voluntarily report their corporate carbon footprint shows that only a handful of companies in the survey came close to complying with DEFRA guidance. This is rather disappointing and signals that enforcement through mandatory regulation is needed. Any disclosures that do not follow recommended guidelines may become less useful to the stakeholders and fail to meet stakeholders' expectation. In Australia, Cotter, Najah and Wang (2011) found that even the company that has received awards for its disclosure record do not disclose enough as compared to the CDSB framework. The Deloitte (2010) report also reveals the wide variety of both formal and informal carbon reporting practices. This does not facilitate comparison between companies or industry sectors, making it difficult to evaluate the relative performance of companies in monitoring and reducing their carbon footprint. Therefore, it is interesting to investigate whether companies make use of the guidelines issued by the government and report the information as recommended (especially after MCRR); or whether the disclosure is a symbolic action, where the disclosure is just a ceremonial compliance rather than giving useful information to the stakeholders. In addition to that, the researcher is interested to investigate whether the regulation has effectively motivated companies to improve their reporting (by following the guidelines) as compared to voluntary year. This is because disclosure under specific requirement and enforcement is argued to be better as companies are liable for significant misstatements or non-compliance action (Criado-Jimenez et al, 2008).

It is anticipated that there will be cases of non-compliance or not full compliance in the mandatory year especially during the first year of its introduction. In the case of environmental reporting, it was evidenced that many companies fail to comply with mandatory requirements and the disclosure quality is low (Adams et al, 1995; Larrinaga et al, 2002; Llena et al, 2007 and Criado-Jimenez et al, 2008). The UK is the first country to make it compulsory for companies to include emissions data for their entire organisation in their annual reports (DEFRA, 2012). This provides an excellent and timely research opportunity to investigate the compliance level of the companies involved.

As stated earlier, carbon reporting is perceived to be able to stimulate companies to engage in emission reduction activities, thus helping the country to achieve its carbon target. Even though emission reduction does not form part of MCRR, it has been contended (see for example REFs) that it will encourage companies to do something to reduce their emissions; so that they can demonstrate to their stakeholders that they are a responsible company and that their emissions are improving over time. Thus, the researcher is motivated to know what steps have been taken by the companies in order to manage their impacts on the environment through carbon emission reduction.

As MCRR is new, some companies, especially first time reporters, might face issues in capturing, analysing and reporting their required emission data. Knowing the issues and problems faced by organizations especially in their effort to comply is important for policy makers in formulating and providing necessary support for companies to improve their compliance. This situation has inspired the researcher to investigate the issues and problems faced by the reporting companies, and how they are dealing with those issues in order for them to fulfil the statutory requirements, as well as implementing the reduction strategy planned.

1.4 RESEARCH AIM AND RESEARCH QUESTIONS

1.4.1 Research Aim

The aim of the research project is to investigate the carbon reporting practice in FTSE 350 companies; covering three main areas of investigations including the extent of carbon reporting in the first mandatory year as compared to a voluntary year; the common stories told in companies' climate change and carbon disclosure; and the dynamic of carbon reporting implementation, including the motivations for disclosure, the problems and issues faced and the implementation approach. The aim leads to the following research questions:

1.4.2 Research Questions

RQ1. What changes are made by the organization to their carbon disclosure in response to the introduction of MCRR?

RQ2. What are the common stories and messages communicated by organizations in their carbon disclosure?

RQ3. What are the motivations, challenges and implementation approach used by organizations in disclosing carbon emission?

The objective of the study is therefore to answer the above research questions.

1.5 MOTIVATION AND RESEARCH CONTRIBUTION

This section explains the motivations behind this study as well as how the findings of the study would contribute to the literature, theory, and practice.

The UK is the first country that mandates the carbon reporting disclosure in annual reports. This has aroused the curiosity of the author into investigating on how organizations react to this new legislation and change the way they report carbon emission data. Another motivation is that, the UK government plans to extend the MCRR requirement beyond LSE listed companies to all large companies. This has raised the question of whether this would be a good plan or not? These motivations have resulted in the formation of the above research question 1. The findings obtained through answering this research question is hoped to contribute in both; literature and practical contribution.

MCRR is still new, with the first reporting year started with the companies having year end on 30th September 2013 onwards. As a result, there has been limited research that has explored the mandatory carbon reporting. Previous studies have touched on the definition of carbon, carbon footprint and carbon accounting (such as Wiedmann and Minx, 2008; East, 2008 and Ascui and Lovell, 2011; Stechemesser and Guenther, 2012) as well as the methodology for the calculation of carbon footprints and the associated problems. (see Wiedmann and Minx, 2008; East, 2008; Pandey et al, 2011; Milne and Grubnic, 2011; Downie and Stubbs, 2012). Other studies (such as Druckman, Bradley, Papathanasopoulou and Jackson, 2008; Swallow and Furniss, 2011) have examined the carbon reduction processes and commitments made by organizations. Some others, like Bebbington and Larrinaga-Gonzale (2008) and Ratnatunga, Jones and Balachandran (2011) have looked at the issues around carbon trading. Lee, Park and Klassen (2015), instead of looking at the content of disclosure, their studies investigate the voluntary carbon disclosure (CDP) influences capital markets and shareholder value. In relation to carbon reporting and disclosure, some of the previous studies in the area are summarised in the following Table 1.2.

Table 1.2: Previous Literature on Climate Change and Carbon Reporting

Authors	Source of Data	Voluntary/ mandatory	Country/setting
Kim, and Lyon, 2007;	CDP	voluntary	USA
Kolk, Levy and Pinkse, 2008;	CDP	voluntary	USA
Prado-Lorenzo et al (2009)	Website	voluntary	USA, Australia, Canada and EU
Doran and Quinn (2009)	Annual corporate filings (Forms 10-K) to the SEC	voluntary	US
Deloitte, 2010	Annual report	voluntary	UK
Rankin et al (2011)	Annual report, sustainability report	voluntary	Australia
Armstrong (2011)	CDP, The Climate Registry, and Climate Leaders Program	voluntary	US
Luo, Lan and Tang (2012).	CDP	voluntary	Global 500 companies
Cotter, Najah and Wang (2011)	CDP and Sustainability report (include in annual report and website)	voluntary	Australia
Cotter and Najah (2012)	CDP	voluntary	FTSE Global Equity Index Series (G500)
Hrasky (2012)	Sustainability and annual report	voluntary	ASX's Top 50 companies- Australia
Zhang, Mcnicholas and Birt (2012)	CDP	voluntary	Australia

Borghei Ghomi & Leung (2013)	Annual report	voluntary	Australia
Stanny (2013)	CDP	voluntary	US
Choi, Lee and Psaros (2013)	Annual reports and sustainability reports	voluntary	Australia
Matsumura, Prakash and Vera-munoz (2014)	CDP	voluntary	US
Liao, Luo and Tang (2014)	CDP	voluntary	UK
Chithambo and Tauringana (2014)	annual reports, sustainability reports and web sites	voluntary	UK
Comyns and Figge (2015)	Sustainability report	voluntary	Oil and gas companies from Global Fortune 500

Despite the growing literature discussing the significance of carbon reporting, there remain few detailed empirical studies assessing the reporting of greenhouse gas emissions (Haigh and Shapiro, 2011). The above table shows that most of the available literatures research on voluntary climate change and carbon disclosure. In the UK, some research (for example Deloitte, 2010; Chithambo and Tauringana, 2014) has been carried out in relation to voluntary carbon reporting. In addition, there are research which focused upon voluntary reporting through CDP (Kim, and Lyon, 2007; Kolk, Levy and Pinkse, 2008; Luo, Lan and Tang, 2012). There are also quite a number of studies that cover the voluntary GHG reporting; however, most of them are not of the UK context. Rankin et al (2011) and Borghei Ghomi and Leung (2013) study voluntary GHG reporting in Australia, while Prado-Lorenzo et al (2009) use a sample of companies from the USA, Australia, Canada and EU in their study. Stanny (2013), Armstrong (2011) and Doran and Quinn (2009) focuses their study on voluntary carbon emissions in the US. On the other hand, a study by Cotter, Najah and Wang (2011) documenting the gap between regulatory requirements and authoritative guidance regarding climate disclosure in Australia. Other research on mandatory reporting, however, were in environmental reporting (such as Mobus, 2005; Frost, 2007; and Criado-Jimenez et al, 2008). As a result, this study offers a valuable complement to the existing voluntary reporting studies, especially in the UK. This research contributes to the literature on climate change and carbon disclosure by providing empirical evidence of the implementation of carbon disclosure, both voluntarily and mandatorily based on the guidelines issued by the UK government.

In terms of practical contribution, the study can provide evaluation and insights on the implementation of MCRR to government and policy makers. This research could help

the government in answering pertinent questions such as: Has the government made the right decision in making disclosure mandatory rather than allowing the Public Companies (hereafter PLCs) report voluntarily? The findings will not only benefit policy makers but also companies. Since the requirements are new, organisations may seek to understand how extensive the disclosure should be, what is expected, how other organisations capture and calculate their carbon emissions, what tools are being used and what other organisations have done to reduce their carbon emissions?. Through this study, an organisation will get some insight into how other organisations are reporting their carbon, so helping comparison and benchmarking processes. The organisation might be able to choose a good example for their future reporting that suits their industry, size and their business activities, thus improving their reporting and compliance levels.

The motivation to explore the stories in corporate reporting as outlined in research question 2 was influenced by the FRC statement which states that:

> *'[We] encourage companies to experiment and be innovative in the drafting of their annual reports, presenting narrative information in a way that enables them to best "tell their story" – FRC (2014 p.6)*

The above statement suggests that organizations use their reporting to communicate or tell their corporate story to their audience. In doing so, organizations are encouraged to use their creativity so that the message of the story can be delivered to the audience as intended. The use of corporate story in communication is further emphasised in CDSB latest report, which recommends that "communication is enhanced by storytelling taking place within a common, shared framework". (CDSB, 2016 p. 4). Motivated by FRC and CDSB recommendations, author tries to seek for the common corporate stories in organizations' carbon reporting. This exploration also includes the way the stories are presented and the messages that those stories are trying to deliver to the audience.

By using the concept of storytelling, this study adopts a new lens in examining company reporting, especially on climate change and carbon disclosure area. The use of a different lens in looking at corporate reporting is hoped to deliver a theoretical contribution in this area of study. Previously, much research has used legitimacy theory in environmental and CSR related studies (see Wilmshurst and Frost, 2000; O'Donovan, 2002; Campbell, Craven and Shrives, 2003; Tilling, 2004; Mobus, 2005; Criado-Jimenez et al, 2008; Van Der Laan, 2009; Buniamin, 2010; Hrasky, 2012;

Pellegrino and Lodhia, 2012; Stanny, 2013). Beside legitimacy theory, stakeholder theory is also one of the common theories used in this area (see Husillos and Álvarez-Gil, 2008; Sprengel and Busch, 2011; Cotter and Najah, 2012). In some studies, stakeholder theory and legitimacy theory are used together (Gray, Kouhy and Lavers, 1995; Zhang et. al, 2012). Elsewhere, Williams (1999) uses political economy theory in explaining voluntary environmental and social accounting disclosure. Impression management theory (Hooghiemstra, 2000; Tata and Prasad, 2015) were also used by the researcher to explain the motivation and the presentation of reporting. Storytelling is commonly used in the area of management such as corporate change, production, and leadership. This research expands its usage by looking at the use of storytelling in corporate reporting, especially in climate change and carbon disclosure.

As mentioned earlier, MCRR is implemented by using a soft approach of 'Comply or Explain'. This soft regulatory environment is one of the reasons that motivate the researcher to investigate why some companies incorporate carbon disclosure as part of their business operations and strategy following MCRR, while there are still other companies that do not. Knowing the motivation behind the reporting would provide a better understanding for the government on the organizations' reporting behaviour (Jeswani, 2008). In addition to that, since the regulation is new, the affected organizations may face some issues and obstacles in complying with the regulation. By knowing the issues and problems faced by the companies in managing and reporting their emissions, governments and policy makers might be able to formulate strategies to help and support them in future regulatory decisions. Findings might also be useful in helping the government to make a decision whether the MCRR should be extended to all large companies (DEFRA, 2012). Further, it is interesting to know how affected organizations adopt the new requirements in their reporting. Therefore the study also seeks to understand the approach used by the organizations in order to fulfil the reporting requirements of MCRR and ensure that they are in full compliance. All these motivations and contributions lead to the development of research question 3 of exploring the dynamic of carbon reporting implementation in reporting organizations.

1.6 SUMMARY OF THE RESEARCH APPROACH AND METHODOLOGY

A qualitative research philosophy has been employed in this study. According to Darlaston-Jones (2007), "the ability to identify the relationship between the epistemological foundation of research and the methods employed in conducting it is

critical in order for research to be truly meaningful" (pg. 19). Looking at the reality of carbon disclosure as different and unique from one company to another, the researcher chose to use qualitative methods of data collection and analysis. The data collection and analysis have been carried out as part of the process through which the researcher has sought to answer the research questions and objectives outlined in section 1.4 above.

There are three stages of data collection involved in this study. The first stage involved the content analysis of annual reports for the years 2010/2011 and 2013/14. This stage of data collection and analysis is to answer research question RQ1 of whether MCRR has successfully encouraged companies to disclose more climate change and carbon emission information. In the second stage, the content analysis of all of the companies' climate change disclosure covering the annual report, sustainability report, websites, press report and other online reporting were carried out in order to identify the common stories told by the companies in this area. This data collection and analysis answer RQ2 of the research question. In the last stage, interviews were carried out in order to investigate the dynamic of climate change and carbon reporting implementation including the motivation behind companies' climate change and carbon reporting; the implementation approach; as well as the issues and problem faced by them. The data gathered at this stage is useful in answering RQ3 and RQ4.

In carrying out data collection, the researcher has been careful to ensure the confidentiality of data, especially for the interviews. The names of participants, as well as the organization is kept anonymous unless permission is granted.

1.7 THESIS OUTLINE

This section provides a summary of each chapter presented in this thesis.

Chapter 1: Introduction

This introductory chapter discusses the background of the study, highlighting the need for this study to be carried out. The chapter proceeds with the motivation of the research that leads to the formation of research aim. The research aim is then broken down into the specific research questions. Next, the summary of the research approach and methodology is explained, before proceeding with the research contributions. Research contribution is categorised into the contribution to the body of

knowledge, practical and theoretical contributions. The chapter ends with the summary of thesis outline of each chapter.

Chapter 2: Literature Review

This chapter critically reviews the previous studies that have researched in the area of climate change and carbon disclosure. However, this review of the literatures focuses upon those studies that are most closely related to the objectives of this study rather than general climate change and carbon studies. The chapter starts with a discussion of voluntary carbon reporting, followed by the reason of why mandatory reporting is deemed to be necessary. The chapter then proceeds by discussing literature concerned with the differences of content of disclosures found between voluntary year and the mandatory year of carbon reporting. Next, the motivations that drive companies to disclose their emissions; especially those that beyond regulatory compliance are discussed. The literature review also covers the barriers and issues faced by the companies in reporting and managing their carbon emissions. The chapter ends by highlighting the problem and gap in the studies that bring the importance of this study into the picture.

Chapter 3: Theoretical Framework

This chapter presents the theoretical perspective for this study; which is used as a tool to signify and support the empirical data that represents the phenomena in the researched area. In this study, the storytelling concept was selected to help understand the companies' reporting content and ways of representing carbon disclosure. The chapter also includes a brief discussion of the theories that were used in the previous literature in the same field.

Chapter 4: Research Method

This chapter outlines the methodology adopted and research methods employed in this study. This includes the identification and discussion of the philosophy underpinning the study, and the choice of methods and source of data. In addition to that, the chapter also explains and justifies the process of selecting the sample. Finally, the chapter discusses how the data was collected and analysed in this study.

Chapter 5: Carbon Reporting - Voluntary versus Mandatory

This chapter explores companies' carbon disclosure in the annual reports for two years (2010/11 and 2013/14). This provides evidence of the reporting under the voluntary carbon disclosure regime and for the later period under the mandatory reporting requirements. The comparative analysis shows differences between the two years; as well as between the FTSE 100 and FTSE 250 indices. In addition, the chapter also focuses on the compliance outcomes from the first year of MCRR implementation and a comparative analysis across industries. As stated in Chapter 3, 2010/11 is chosen to reflect reporting after the introduction of the Carbon Reporting Guidelines by DEFRA in September 2009; while 2013/14 is the first year of MCRR implementation. Based on the criteria explained in Chapter 3, a total of 158 companies were selected for the sample, comprising of 63 companies from FTSE100 and 95 companies from FTSE250.

Chapter 6: Stories in Climate Change and Carbon Disclosure

This aims to investigate storytelling themes around carbon and climate change disclosure and how companies present the stories in their disclosure. Four common themes are identified and discussed in this chapter: the stories to share knowledge on climate change, stories around making sense of emission figures; the stories of companies' effort and commitment in managing and reducing their carbon emissions, and the story of companies' achievements in climate change and carbon emission management.

Chapter 7: The Dynamic of Climate Change and Carbon Reporting: Motivation, Implementation Approach and Issues.

This chapter explores the process of reporting carbon especially in relation to mandatory reporting. Apart from regulation, this chapter seeks to uncover other drivers that motivate the organization to release their carbon emission information publicly. The chapter also investigates the work behind the scenes required to help companies to manage their emissions and maintain compliance on carbon disclosure. The chapter identifies some of the problems faced by companies and how they deal with them, in order to ensure that they can implement their emission reduction strategies, as well as comply with the regulation.

Chapter 8: Discussion

The chapter provides a discussion of the findings with comparisons to previous literature. The discussion of the findings is encapsulated in thesis contributions; which are divided into the contribution for literatures, theoretical contribution, and practical contributions.

Chapter 9: Conclusion

The chapter concludes the thesis by summarising the important chapters from the thesis. In addition to that, the discussion on the practical contributions of the study was extended under the implication of the study section. The chapter also highlights the limitations of the research, followed by some suggestions for future research that can be undertaken in the climate change and carbon disclosure area. This chapter is concluded with the reflections on my own personal journey in completing this PhD research.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

This chapter provides an overview of the relevant literature in climate change and carbon reporting that link to the scope and objectives of this research. It is organized as follows. The first section provides an insight of the previous studies on voluntary reporting and why mandatory reporting is often perceived to be necessary to stimulate disclosure. The next section evaluates the types of corporate stories that develop around corporate carbon disclosure. The following section discusses the factors affecting climate change and carbon disclosure, as well as the motivation and drivers behind carbon reporting. Next, there is a review of literature that discusses the barriers and issues in carbon reporting. The literature on the emission reduction initiatives taken by organizations to minimise their carbon footprint is also briefly discussed. Finally, the conclusion section provides gaps and limitations of the previous research.

2.2 CHANGES MADE BY THE ORGANIZATION TO THEIR CARBON DISCLOSURE IN RESPONSE TO THE INTRODUCTION OF MCRR

This section discusses the literatures on the impact of the legislation on the companies' disclosure, particularly climate change and carbon disclosure. It will start with the discussion on why mandatory reporting is needed before looking at the changes brought by regulation into the carbon reporting.

2.2.1 Voluntary Reporting and the Needs for Mandatory Reporting

Since the late 1990s, a number of voluntary government schemes and non-governmental initiatives have emerged, which encourage enterprises to measure and report their GHG emissions (Kauffmann et al, 2012).

In the UK, organizations can voluntarily make the disclosure through Carbon Disclosure Project (CDP) or follow the voluntary guidelines such as DEFRA guidelines and GHG Protocols. CDP is an international, not-for-profit organization providing a global system for companies and cities to measure, disclose, manage and share vital environmental information. CDP holds the largest database of corporate climate

change information in the world and has been operating for over a decade. It has become the mechanism for organisations worldwide to measure and disclose GHG emissions and climate change risk information. In the UK, CDP requests information from the largest 600 listed companies on behalf of 551 investors with £71 trillion in assets under management (CDP and CDSB, 2011). When CDP launched its first FTSE 350 report in 2006, only 49% of companies responded to the questionnaire (CDP, 2012). In 2012, 69% of companies (96% of the FTSE100) responded, disclosing more information than ever before (CDP, 2012). The figure shows that "the companies are increasingly responsive to CDP's request, which shows that business sees the threats and opportunities presented by climate change as real and material" (CDP, 2012 pg. 11).

Besides CDP, in the UK, DEFRA (2009) produced measurement and reporting guidelines for the organizations which voluntarily disclose the carbon emission information. The guidelines are produced in conjunction with the requirements of the Climate Change Act 2008. The produced guidelines aim to support UK organisations in reducing their contribution to climate change. Intended for all sizes of business and for public and voluntary sector organisations, the guidelines explain how to measure GHG emissions and set targets to reduce them (DEFRA, 2009). The guideline is based on the GHG Protocol, and aligns with many widely used national and international voluntary measuring and reporting schemes such as the International Organisation for Standardisation (ISO) 14064-1 and the Carbon Trust Standard. The guidance also complements both PAS 20509 and ISO 1404010 which can be used to measure the carbon footprint of products (DEFRA, 2009). Very recently, in June 2013, DEFRA has produced latest guidelines on environmental reporting, which include the mandatory GHG emissions reporting guidance. The guidelines set out both the requirements of the regulations and also outline additional information that is likely to be useful to data users.

In addition, there are number of other guidelines available related to climate change and carbon disclosure globally than can be followed by the UK companies in order to voluntarily disclose their carbon data, such as International Organization for Standardization (ISO) 14064, Global Reporting Initiative Guidelines (GRI), and World Business Council for Sustainable Development and World Resources Institute (WBCSD and WRI) (Borghei-Ghomi and Leung, 2013).

Theoretically, organizations should voluntarily disclose all the information they have, as withholding it would be perceived by investors as hiding negative information, and thus lower investors' estimations towards organisations' value (Grossman, 1981; Berthelot, Cormier and Magnan, 2003). According to Kolk et al. (2008), there are an insufficiency of commensuration and limited disclosure value to external stakeholders alike investors, non-governmental organizations, and policy makers. On the other hand, managers usually will only disclose favourable information if negative information impacts detrimentally on the organisations, such as a decrease in cash flow or market value (Berthelot et al., 2003).

A general increase in the demand for corporate accountability in the mid-1990s as a result of numerous global corporate scandals has driven stakeholders to request more transparent information to safeguard their interest in the corporation (Swift, 2001). In addition, the Earth Summit in 1992 and the Kyoto protocol in 1997 have raised awareness and knowledge from the general public that climate change and carbon emission imply real environmental risks for corporations (CDP, 2008; CERES, 2008). Scandals and malpractice of environmental and social issues involved some Corporations (such as Shell and Wal-Mart) have received public attention and significantly impaired their reputation, image and brand (Nurse21, 2014; Bekefi and Epstein, 2008; Bekefi, Jenkins, and Kytle, 2006; Anderson, 2006).The investors' initiatives such as the Carbon Disclosure Project (CDP) and the disclosure frameworks that developed by the Institutional Investors Group on Climate Change (IIGCC) have encouraged companies to report on their climate change management systems and processes, greenhouse gas emissions, and risks and opportunities that materialized due to climate change (Sullivan and Gouldson, 2012). Consequently, investors, environmental activists and other stakeholders became highly interested in the disclosure of the corporation's climate change management, greenhouse gas emissions and social practices in managing their environmental risks and social issues (Benn, Dunphy and Griffiths, 2014; Kolk and Pinkse, 2010; Crawford and Williams, 2010; Ruggie,, 2004; Sharma and Vredenburg, 1998).

Through reviewing the literature on carbon emission and reporting, we can see that the practice and development of voluntary disclosure standards on carbon emission (particularly, in the United Kingdom) were spreading from the mid-2000s to 2011. However, the quality of reporting (and disclosure) and standardization information on carbon emission have been criticized (Okereke, 2007; Hutchison and Lee, 2005). For example, Okereke expresses that "there are variations in the carbon metrics used for

tracking and reporting and in the baselines used, all of which create enormous comparability problems for understanding processes and evaluating performance" (Okereke, 2007, p. 19). Criticisms on voluntary disclosure would imply that a standard requirement and guidelines through mandatory enforcement would be necessary for solving the weaknesses of voluntary reporting.

On the other hand, some UK organizations have disclosed their carbon emissions voluntarily through the CDP or based on DEFRA guidelines. However, some researchers (such as Adams, 2004; Deegan and Rankin, 1996; and Criado-Jimenez et al., 2008) argued that the voluntary reporting does not serve the demands of stakeholders because it lacks neutrality and objectivity. Tilt (1994) and Mobus (2005) similarly argue that public interest groups find voluntary environmental reporting to be both insufficient and low in credibility, with concerns of selectivity and lack of independent verification of performance. Cotter, Najah and Wang (2011), who seek to explore the gaps between regulatory requirements and authoritative guidance regarding climate disclosure in Australia, found that there is an inadequate amount of disclosure in company's reports about some aspects of climate change impacts and their management. Further, the study also suggests that the disclosures tend to lack technical detail and are somewhat skewed towards the more positive aspects of climate change impacts and management.

Despite many companies voluntarily disclosing and reporting their climate change-related information, Sullivan and Gouldson (2012) argue that investors have constantly criticised these companies for not supplying them the information needed for investment decision-making. According to Sullivan and Gouldson (2012), investors have limited interest in companies reporting in relation to carbon and climate change due to the low quality of disclosed information that does not assist them in making a meaningful comparison between companies. Comparison is one of the main drawbacks of voluntary reporting. Kolk et al (2008) and Andrew and Cortese (2011) who has examined the CDP disclosure concluded that CDP is successful in increasing the response rates, but less successful in encouraging comparable and reliable emission data. This is because the responding companies used a combination of methods for their disclosure (Andrew and Cortese, 2011). As related to CDP, year by year comparisons are difficult as the questions change from year to year (Kolk et al, 2008; Stanny, 2013). The comparison is harder when a large number of companies either did not respond at all to the CDP or choose not to provide emission data (Andrew and Cortese, 2011). Similarly, comparison and evaluation are hard when companies

do not fully comply with DEFRA GHG reporting guidelines and report a wide variety of data in different style (Deloitte, 2010). Further, Deloitte (2010) found that even though few companies made disclosures explaining year-on-year movements in sufficient depth, however many companies failed to make basic disclosures around the reporting methodology used, or accounting principles applied, highlighting a lack of transparency around measurement principles and reporting of carbon footprints. A study by Sullivan and Gouldson (2012) of voluntary corporate carbon reporting in supermarkets concluded that voluntary reporting does not satisfy the needs of investors. In addition, they have also found that it is hard for investors to make a meaningful comparison between companies because the information is not standardised (Sullivan and Gouldson, 2012).

Drawbacks with voluntary reporting, including the perceived deficiency in the quality of information on carbon and climate change, and increased stakeholder demand for accountability have increased interest in and demand for more mandatory reporting for corporations (Hess, 2007). In 2012 the UK government announced its intention to introduce mandatory reporting requirements for large companies' signalling a step change in the debate. The mandatory reporting requirement aims at improving the voluntary reporting and addressing the issues of quality information and investors interest. Generally, mandatory reporting offers numerous improvements such as the formation of standardized and comparable measures that enable benchmarking and best practices (Hess, 2007). The well created and effective execution of mandatory carbon and climate change reporting can best support information-based governance by addressing the limitations in the information being provided by corporations. Even though establishing mandatory reporting is not a remedy to all of the issues over data quality, consistency and comparability, it can at least promote better data transparency as well as meaningful engagement between stakeholders and organization to work together to find "mutually agreeable solutions" (Hess, 2007 p.470). On the other hand, stakeholders will need to continue to put in time and resources in understanding and interpreting data as a crucial external part of delivering effective governance.

Consequently, mandatory (or compulsory) reporting requirements seem to be appropriate in enhancing the quality of reporting. The argument is that, under specific requirement and enforcement, companies are liable for any misstatement or non-compliance (Criado-Jimenez et al, 2008). Nordberg (2010) highlighted that there are demands that governments must do more to regulate corporations and industries to

promote deep carbon reductions in emissions and foster rapid changes in business practices and culture. On the other hand, Giddens (2008) and High and Shapiro (2011) argue that regulations taking account of social pressures for companies to be more responsible for their ecological impacts are politically unattractive. This is because they are aimed at reductions of economic activity within energy-intensive sectors (Giddens, 2008) but at the same time seek to promote stable outcomes and the chances for market survival (Fligstein, 2001; High and Shapiro, 2011). The stakeholder accountability perspective and critical theory perspective in CSR and environmental accounting also urge for the need of regulation (Brown and Fraser, 2006; Stanny, 2013). Under stakeholder accountability perspective, as the environmental disclosure is not only for shareholders but all stakeholders, then regulation is needed to ensure unbiased disclosure. Similarly, under critical theory perspective, without regulation, the profit motive of organisations will not allow for 'real accountability' to any stakeholder (Brown and Fraser, 2006; Stanny, 2013).

In responding to the launch of the government's consultation on GHG reporting, The Institute of Environmental Management and Assessment (IEMA), stated that carbon reporting can turn into an opportunity for the organizations to reduce costs and improve competitiveness. Martin Baxter, Executive Director, Policy, IEMA said that "Over 80% of environmental practitioners we surveyed say that mandatory reporting of GHG emissions should be introduced for companies". In CDP FTSE 350 report for 2012, despite that most (84%) of the responding companies believe that upcoming regulations pose a risk, 74 percent also see regulation as an opportunity.

The future of carbon reporting is seen to be driven by regulation (CDP, 2012). Laws and regulations are important because without them disclosures are voluntary and are unlikely to be uniform and comparable across firms (Lee and Hutchison, 2004). With little or no mandated verification, carbon emissions disclosure may be perceived as insufficiently reliable owing to variations in measurement and reporting of this data (Simnett et al., 2009). Hrasky (2011) also suggested that regulation is necessary to achieve consistency and comparability in carbon-related reporting and accountability and to encourage, in some sectors at least, a response to the problem that is more than symbolic "green-washing". However, the regulations must be clear in order to avoid any misinterpretation or manipulation that lead to bias in reporting (Lee and Hutchison, 2004). While mandatory reporting in the UK will continue to drive more companies to report emissions information in their annual reports, voluntary reporting through CDP will provide more detailed information for companies to determine what

is material and for investors to use in their research and analysis of future risk (CDP, 2012).

Despite the criticism of voluntary reporting and the demand for mandatory reporting, there are arguments that would favour voluntary reporting as compared to mandatory. For example, Mobus (2005, pg. 493), stated that “voluntarism borne of cultural enlightenment rather than mandatory compliance is also a greater good”, thus saying that voluntary is preferable than mandatory. Mobus (2005) argues that voluntary disclosure is one means used by the organisations to cultivate procedural moral legitimacy; thus by producing voluntary reports that communicate positive organizational efforts, managers will contribute to culturally defining “sound practices”, and cultivate moral legitimacy by creating accounts of good-faith efforts to be socially responsible for the environment. However, he doubted that voluntarism alone will reliably inform relevant and interested audiences about organizational environmental performance (Mobus, 2005). On the other hand, In business case perspectives (see Brown and Fraser, 2006; Stanny, 2013), researchers argue that when business and environmental interest are aligned, mandatory requirements will be unnecessary because organisations’ voluntary disclosure will be sufficient for shareholders’ needs. Further, a study by Matisoff (2013), which assesses the effectiveness of two disclosure programs: US state-based mandatory carbon reporting program and CDP; conclude that the state-based program had no impact on either carbon intensity or total carbon emissions.

2.2.2 Impact of Mandatory Requirements

Even though there is very limited literature on mandatory carbon reporting, however, there are quite a number of studies cover the introduction, implementation and the impacts of mandatory environmental requirements on disclosures (see Frost, 2007; Peters and Romi, 2010; Criado-Jimenez et al, 2008; Cowan and Gadenne, 2005; Bebbington and Thy 1999; and Mobus, 2005). The role of mandatory requirement is basically to ensure relative uniformity in reporting practices, as well as provide minimum disclosure requirements that voluntary disclosure alone cannot satisfy (Berthelot, Cormier and Magnan, 2003). In addition, it can also help in reducing the information asymmetry between investors and managers (Berthelot et al, 2003; Lev, 1988).

A study by Frost (2007) on the impact of the introduction of mandatory regulation in Australia found that there is a significant increase in the recognition of environmental regulation within the statutory sections, with a subsequent decline of disclosure in the voluntary section. Criado-Jimenez et al (2008) investigated the effectiveness of the improved environmental regulation in Spain and suggest that the progressive and improved regulation could increase the quantity and the quality of disclosure. Despite this increment, however there is still a problem of non-compliance. Potoski and Prakash (2005 p. 236) suggest that the non-compliance stem from a "willful avoidance or ignorance of what government regulations require". In contrast, an investigation of the mandatory environmental reporting in Denmark shows a high level of compliance with the law (Bebbington and Thy 1990). In addition, the authors also found that the mandatory requirement appears to have saved as much money as it cost; where about 50 percent of the firms who undertook the environmental reporting believed that they had achieved financial benefits which arose from the process of producing the accounts which compensated for the costs involved.

Comparing voluntary and mandatory years, Cowan and Gadenne (2005) found that Australian listed companies have a propensity to disclose higher levels of positive environmental disclosures in the voluntary sections of the annual report than in the statutory sections of the annual report. Their study results also suggest that companies adopt different disclosure approaches when the disclosures are potentially under surveillance or increased scrutiny via mandatory requirements. It is also evidenced that companies continue to provide favourable boosted information within a voluntary reporting environment than within a mandatory reporting environment, and suggests that stakeholders may be more likely to receive information that is less favourable to the corporation (and potentially more decision-useful to stakeholders) within a legislated disclosure environment (Cowan and Gadenne, 2005).

The review of the above literature therefore suggests that mandatory requirements may help encourage companies to at least minimum disclosure (Berthelot, Cormier and Magnan, 2003); improve company's climate change disclosure in both quantity and quality (Criado-Jimenez et al, 2008); promote uniformity in reporting practices that enhance comparability (Berthelot, Cormier and Magnan, 2003); reduce bias information (Cowan and Gadenne, 2005) and reducing the information asymmetry between investors and managers (Berthelot et al, 2003; Lev, 1988). According to Potoski and Prakash (2005), compliance with regulation can be improved through the requirement of third party verification. Compliance with mandatory requirement does

not mean that companies stop producing voluntary disclosure. Mandatory disclosure always accompanied by voluntary disclosure voluntary disclosure is the extension and complement of compulsory information disclosure system (Tian and Chen, 2009). On the other hand, the finding from Sukthomya (2011) shows that companies will only disclose voluntary disclosure in addition to mandatory disclosure if only they perceived that the additional disclosure will benefit them.

2.3 COMMON STORIES AND MESSAGES COMMUNICATED BY ORGANIZATIONS' CARBON DISCLOSURE

In the previous literature on the content of disclosure of climate change and carbon, most of the research focus on the availability of disclosures based on disclosure index (see Haque, Deegan and Inglis, 2010; Cowan and Deegan, 2011; Rankin, Windsor and Wahyuni, 2011; Hollindale, 2012; Choi, Lee and Psaros, 2013; Borghei-Ghomi and Leung, 2013, Chithambo and Tauringana, 2014). The disclosure based on disclosure index may carry few corporate messages and goals, but it was not explicitly discussed in previous studies. Since the themes of the stories in the carbon disclosure were never been researched before, therefore the stories can only be impliedly drawn from the disclosure index categorisation.

Literature shows that the common categorisation of disclosure index includes the information on GHG emissions (Borghei-Ghomi et. al, 2013; Choi et. al, 2013); climate change risks and opportunities (Choi et. al, 2013; Borghei-Ghomi et. al, 2013; Carbon Clear, 2013,2015); energy consumption (Choi et. al, 2013); GHG reduction (Borghei-Ghomi et. al, 2013; Choi et. al, 2013; Carbon Clear, 2015); GHG achievement (Borghei-Ghomi et. al, 2013) and GHG emission accountability (Choi et. al, 2013). Meanwhile, Chithambo and Tauringana (2014) divide their disclosure index into quantitative and qualitative disclosure; and Rankin et.al, based on ISO 14064 has categorised their disclosure into a description of GHG inventory and other issues to be considered.

The information on GHG emissions combines both numerical information and narratives (Borghei-Ghomi et. al, 2013; Malamatenios, 2014) so that the information provided is more credible (Malamatenios, 2014), transparent and understandable. The numerical data includes total emissions, emissions by scope, emissions by business unit or geographical area, previous periods' emissions and emission reduced through the purchase of green tariff (Rankin et.al, 2011; Borghei-Ghomi et. al, 2013; Choi et.

al, 2013; Chithambo and Tauringana 2014). On the other hand, narrative is used in order to explain the methodology used, the definition of scopes, the emission boundary, period of disclosure, exclusion of emissions, as well as the third party verification (Rankin et.al, 2011; Borghei-Ghomi et. al, 2013; Choi et. al, 2013; Chithambo and Tauringana 2014). In addition to that, Rankin et al (2011) also include the statement of compliance to ISO 14064 to accompany the emission numbers in their disclosure index.

Information on climate change risk and opportunities covers the assessment of risks and opportunities, as well as its financial impact (Choi et. al, 2013). Chithambo and Tauringana (2014) include regulatory risks and other risks as resulted from climate change as part of the quantitative information in their index. As reported by Carbon Clear (2013), the assessment of risk triggers awareness of the companies on the opportunities that come with it.

The information on the carbon reduction shows that the disclosure is not limited to the initiatives taken by the companies to reduce their emission; but also cover other related information such as the reduction target, the reduction achieved, as well future planning on carbon emission reduction. In addition to that, Choi et. al, (2013) also include the cost of future emissions reduction planning.

In term of GHG achievement, not much information is included under this category. Borghei-Ghomi et. al, (2013) only include the achievement of targeted emission in their disclosure index under this category, while others do not have this categorisation. Under the heading of GHG emission accountability, Choi et. al, (2013) includes the narrative explanation of where responsibility lies for climate change policy and action; and mechanism by which Board reviews company progress on climate change actions (p. 22). In regard to accountability, Chithambo and Tauringana (2014) include the statement on company position on climate change and related responsibilities, as well as responsible person for GHG reporting.

From the above literature, it can be concluded that previous studies cover on the surface of carbon disclosure without going deeper in understanding what are the messages carried by those disclosures. In addition to that, the disclosure is lacking in term of the categorisation of the disclosure thus it is hard for the reader to link one information to another. With this gap in mind, the researcher hopes this study can provide a different way of looking and reading companies' disclosure by focusing on

what are the messages companies trying to deliver to the audience; thus the information disclosed in more understandable and useful.

2.4 MOTIVATIONS AND CHALLENGES IN DISCLOSING CARBON EMISSION

This section presents the literature on the dynamic of carbon disclosure implementation, covering the motivation behind the disclosure; and the issues and challenges faced by the organization especially in ensuring that they are in compliance with the new regulation. The implementation of the new regulation has motivated the researcher to explore in depth on how companies response to this regulation, as very limited literatures are available in this area, thus creating the gap that this study wished to fill.

2.4.1 Motivation for Carbon Reporting

Even though the soft approach of 'explain or comply' is used for MCRR, many companies seem to comply; while those that already disclose voluntarily before MCRR continue to disclose carbon emission data. This situation has motivated the researcher to find out the companies' motivations to disclose their emissions data, especially in the absent of punishment for non-compliance. The review of literature found that there are limited studies that discuss in deep on the motivation for carbon and climate change disclosure. Literatures have given a lot of attention on the factors that influence voluntary carbon disclosure (see Prado-Lorenzo et al, 2009; Rankin, 2011; Zhang et al. 2012; Borghei-Ghomi and Leung, 2013; Choi, Lee, and Psaros, 2013; Liao, Luo, and Tang, 2014; Chithambo and Tauringana, 2014). However, these studies focused on the relationship between company's characteristics and the decision to disclose. The findings of the previous studies show that firm size is a dominant factor for GHG disclosure (Prado-Lorenzo et al, 2009; Rankin et al, 2011; Zhang et al. 2012; Choi et al., 2013; Chithambo and Tauringana, 2014). A large organization will receive more public attention (Archel, 2003; Freedman and Jaggi, 2005; Prado-Lorenzo et al, 2009), face greater environmental pressure (Stanny and Ely, 2008) and is likely to be under public scrutiny (Liu and Anbumozhi, 2009). Other than size, industry which organisation operates was also found to be significantly influencing the disclosure (Prado-Lorenzo et al, 2009; Rankin et al, 2011; Choi et al, 2013). The environmental sensitivity of the industry has been found to have a positive relationship with companies' disclosure. This is because the environmental sensitive industries have always been subject to substantial regulation as well as under intense scrutiny from

communities and local activist organizations (Gunningham, Thornton and Kagan, 2005).

There are numbers of motivations that drive companies to engage in climate change and carbon disclosure. In term of motivation to disclose, a study by Jeswani (2008 p. 55) briefly lists down 'cost savings', 'management commitment', 'corporate targets' and 'compliance with regulations' as the most important motivations for all of the sample companies studied. However, there is no thorough explanation on how these drivers motivate the companies studied. Another study related to the motivation is done by Okereke (2007). Nonetheless, this study focus on the motivation for carbon management as a whole, rather than just disclosure. Okereke (2007) recommend that profit, credibility and leverage in climate policy development, fiduciary obligation, guiding against risk and ethical considerations are the main motivations for carbon management; while energy prices, market shifts, regulation and governments directives, investors' pressure, and technological change; form the disclosure drivers.

The review of other literature suggests that social pressure (including stakeholders), gaining and maintaining legitimacy, complying with regulations, image and reputation and ethical motives are the imperative motivators for the disclosure. The following Table 2.1 provides a summary of the disclosure motivators together with its source of literature.

Table 2.1: Motivations for climate change and carbon reporting and management

Motivation/ Drivers	Source
Social pressure and Stakeholders' expectation	Jeswani (2008); Okereke 2007, Kolk, Levy and Pinkse (2008); Brønn and Vidaver-Cohen (2009); Luo, Lan and Tang (2012); Talbot and Boiral (2015)
Legitimacy	Suchman (1995); Gray et.al (1995); Hooghiemstra (2000); O'Donovan (2002); Tilling (2004); Ennis, Kottwitz, Lin, and Markusson (2012)
Statutory requirements	Freedman and Jaggi (2005); Brammer and Pavelin (2006); Lewis et al (2014)
Image and reputation	Sukthomya (2011); Chithambo and Turingana (2014); Tata and Prasad (2015); Lee, Park and Klassen (2015)
Financial/economic benefits	Jeswani (2008); Sukthomya (2011); Perters and Romi (2010); Gamerschlag, Möller, and Verbeeten (2011); Luo et al (2012); Matisoff (2013);
Management leadership/morality	Lewis, Walls and Dowell (2014); Okereke (2007); Matisoff (2013)

2.4.1.1 Social pressure and stakeholders' expectation

Previous literatures suggest that social pressure is perceived to be one of the main determinants for the companies to commit themselves to the climate change issues, including reporting and reducing their emissions (Talbot and Boiral, 2015). Luo, Lan and Tang (2012) define social pressures as the pressure from public opinion. The widely published data and facts regarding the potential impacts of climate change have led to increased pressure from investors, governments and environmental organizations on companies to disclose and reduce their GHG emissions from their processes, products and services (Jeswani, 2008). These disclosures are argued to serve as a platform for the company to show stakeholders that they are doing 'the right thing' by demonstrating their stewardship toward the natural environment (Brønn and Vidaver-Cohen, 2009).

In voluntary environment, Kolk, Levy and Pinkse (2008) found that institutional investors could successfully use their power to urge firms to disclose extensive information about their climate change activities in the Carbon Disclosure Project (CDP). The increase in CDP response rate from year to year has proven the success of stakeholders' pressure for disclosure (Okereke, 2007). With the existence of mandatory requirements, government and other stakeholders can give more pressure to the organisation to improve the disclosure as the choice of disclosure depends on how firms respond to public pressures exerted by various stakeholders and constituencies (Berthelot et al. 2003; Zhou, 2010). As a result, changes in pressures lead to changes in the extent of environmental disclosure (Cormier et al. 2004; Milne et al. 2002; Zhou, 2010).

Pressures to disclose and manage emission may originate externally from customers, transaction partners, government agencies, and local communities; or internally from employees; and laterally from salient business references groups such as competitors and industry associations (Brønn and Vidaver-Cohen, 2009 p.95). Companies will respond effectively when companies perceive that their viability may depend on their ability to response to these pressure (Brønn and Vidaver-Cohen, 2009). Similarly, Wilmshurst and Frost (2000) found that companies' response to the stakeholders' pressure depends on the perceived importance of the stakeholders' information needs: the higher it is, the greater is the environmental disclosure.

2.4.1.2 Pursuing and Maintaining Legitimacy

Hrasky (2011) points out that one way for an organisation to convince stakeholder audiences that their existence and their operations are legitimate is through disclosure. Companies are considered to be legitimate when their actions and activities are perceived or assumed to be "desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and, definitions" (Suchmann 1995, 574). If corporate disclosures can persuade stakeholders to believe that the firm's operations are legitimate and the firm is operating as an environmentally responsible citizen, the risk to legitimacy is reduced. The popularity of legitimacy as a perceived driver that influences companies to make disclosure has placed legitimacy theory as a dominant theory for environmental and CSR related study (Hooghiemstra, 2000; Tilling, 2004).

O'Donovan (2002) suggest that legitimacy is rather difficult to establish and maintain, as the perceptions towards organizations will change when corporate performance or society's expectation, or both has changed. Therefore, disclosure is an important means of communicating the alignment of a companies' activities with its society (O'Donovan, 2002). Environmental disclosure is particularly important as a tool used in repairing legitimacy when a company has been implicated in a negative event or predicament. Therefore, high emitters or high polluting companies tend to disclose more information, as a way to "convince stakeholders that their activities are aligned with the values of society, thereby seeking acceptance, or avoidance of penalization" (Ennis, Kottwitz, Lin, and Markusson, 2012). On the other hand, the pursuit of legitimacy may sometimes conflict with the transparency objectives of carbon disclosure. This is because, in order to maintain a positive perception from the audience, the disclosure may be more of symbolic action rather than relate to the actual activities (Hrasky, 2012).

2.4.1.3 Image and Reputation

Reporting environmental data such as carbon disclosure requires efforts and financial sacrifice. Therefore, researchers (such as Sukthomya, 2011 and Tata and Prasad, 2015) suggest that disclosure of this data could create a positive image of management performance and signal their commitment to society. Besides reflecting commitment, the disclosure can also demonstrate that companies have the resources to create new developments (Sukthomya, 2011). In investigating the drivers that affecting voluntary disclosure in Thailand, Sukthomya (2011, p.220) found that the

majority of interviewees agree that high quality disclosure will boost a company's image and build people's confidence in the company; as disclosure is viewed as a long term marketing tool for the company.

When companies are faced with a negative event or predicament, it is not just legitimacy that needs to be repaired, but also their reputation. Therefore those companies attempting to repair, restore or enhance its reputation in its society and among its stakeholders are expected to disclosure more information to restore their image (Chithambo and Tauringana, 2014). The impact of disclosure on reputation has also encouraged stakeholders' to put more pressure on organizations to disclose as it also means protecting their investment and return (Lee, Park and Klassen, 2015).

Tata and Prasad (2015) propose that incongruence between desired and current images motivates an organization to decrease the incongruence through disclosure (p. 765). According to them, this image incongruence occur when companies feel that too much responsibility was assigned to them for negative events or their responsibility for any events are evaluated highly negatively than it should be. Communication through corporate disclosure can help reduce this gap and improve audience perception towards organization by showing organization's commitment and intentions to enhance their performance (Tata and Prasad, 2015).

2.4.1.4 Statutory Requirements

It has been predicted that companies will disclose environmental information when they perceived that the benefits of disclosure outweigh its costs. This benefits, however does not limited to financial, but in the environment where the legal requirements exist, the benefits include protection from legal or regulatory action as well as image and reputation protection (Lewis et al, 2014). Potoski and Prakash (2005) recommend that the compliance is stronger if the regulatory requirements or scheme has a high brand reputation. In the case of ISO 14001, even though it require its members to adopt and extensive and costly environmental system (EMS), companies will do so as the certification bare a strong positive reputation (Potoski et al, 2005). This would suggest that reputation of regulatory requirements positively impact the level of compliance.

It was also argued that compliance with standard increase companies' disclosure credibility, especially when the disclosure is audited (Dumontier and Raffournier, 1998; Potoski and Prakash, 2005). In addition to that, disclosure in compliance with

legislation requirement would protect companies from having to pay penalties for non-compliance, thus saving companies' cost (Lewis et al, 2014). Freedman and Jaggi (2005) argue that larger firms attract more attention from media, policy makers and regulators. Consequently, companies would opt to comply with regulation for the fear that their pollution performance would be underestimated or ignored by policy makers and regulators (Freedman and Jaggi, 2005).

2.4.1.5 Management Leadership and Morality

Moral motivation is argued to be powerful enough to encourage companies to engage in carbon management actions even in the absence of any form of direct external (regulatory and public) pressure; as long as it does not negatively impact their profit (Okereke, 2007). On the other hand, Hackston and Milne (1996) argue that the social responsibility of the business entity is not limited to maximizing the profit; but has obligation to help society and protect the environment even though it means less profit.

The moral-based motivation however is less obvious since it is hard to determine whether the disclosure is resulted from the change in behaviour (Matisoff, 2013). According to Matisoff (2013), "participation in the CDP may not cause firms to change environmental behavior, but may be a mechanism to signal investors of changes in environmental management" (pg. 589). However, he claimed that "it is statistically indistinguishable whether information disclosure is the first step towards improved environmental management, or simply a mechanism to signal investors of planned improvements in environmental management" (Matisoff, 2013 p.589).

Lewis et.al (2014), in investigating the heterogeneous reaction and response to the institutional pressures among companies demonstrates that firms' receptivity to pressures varies by the source and type of pressure employed. The differences in response were argued to be influenced by managerial characteristics and how institutional pressures are perceived and interpreted.

2.4.1.6 Financial/economic benefits

According to Sukthomya (2011), cost-benefit associated with the disclosure was confirmed as one of the main factors that influence company's disclosure especially voluntary disclosure. In other words, companies will only make beneficial disclosure

which is able to help companies to reduce costs or increase revenues, or the benefits of disclosure outweigh its costs (Perters and Romi, 2010; Gamerschlag, Möller, and Verbeeten, 2011).

Collecting emission data provides management with information for strategic planning, as well as for projecting costs and benefits associated with cap-and-trade or with a carbon tax system (Matisoff, 2013). In carbon management, the obvious financial benefits gained by the companies is through emission reduction via energy efficiency (Jeswani, 2008). According to Stern (2006), “energy accounts for about two-thirds of emissions” (p. 7), therefore reducing the energy used would directly reduce emission. Energy reduction such as minimising the use of electricity and transportation fuel would definitely save companies’ cost. Reductions in emission through energy reduction however, depend largely on the “changes in the links from economic activity to energy intensity, and from energy intensity to carbon intensity” (Stern, 2006 p.7).

In addition to cutting the cost of energy, emission reduction initiatives can also help minimising possible costs such as carbon charges, carbon fees, carbon tax, and emission permits costs (Luo et al, 2012). This cost cutting, when included in the corporate disclosure, would form a good news to the stakeholders (Luo et al, 2012).

2.4.2 Issues in Carbon Reporting and Management

There are many challenges or barriers faced by regulators and companies in establishing, implementing and realizing effective reporting and management of carbon, climate and greenhouse gas emissions. Due to the paradoxical correlation between business activity and level of carbon emissions, radical reformation and adjustment in business and industrial structure and activity are needed to address and improve issues related to climate change, economic development and carbon emissions and reporting challenges. In order to deal with these challenges, an array of options and approaches have been adopted to advance and boost innovation, clean technology, green investment, adaptation, and ultimately to achieve climate protection (Okereke, 2007).

In reporting carbon emission related information, companies may face problems and challenges such as problems related to the burden of compliance with few requirements, measurement of emission; cost involves, as well as staffs’ skills and awareness. The non-standardization and different requirement of the greenhouse gas

emissions (GHG) standards in term of disclosure; reporting; and counting and measuring emissions are barriers that experienced by multi-national companies across different countries, geographic regions and industries, which have raised the issues pertaining to different levels of vigour and difficulty in meeting those various standards (Olson, 2010). Having different requirements in different countries also bring to light a possibility of different understanding and definition of what the term 'carbon' means, which have increased the need for globally harmonize regulatory requirements (Verisae, 2010). In addition, accounting for and auditing of GHG emissions are clearly less developed across a number of areas have created challenges that make it less straightforward than traditional financial accounting and auditing that need to be addressed closely for ensuring effective reporting of GHG emissions (Olson, 2010). Consequently, this has led companies in virtually every industry to make a number of claims to indicate the improvement of their environmental stewardship, reporting on GHG emissions, sustainability reporting, transparency including in making the marketing messages to their customers and other stakeholders in order to distinguish themselves in the marketplace. (Olson, 2010; Ernst and Young, 2010).

Despite the fact that standards are created for categorising several sources of carbon emissions, there is still likely to be divergence across industries and jurisdictions on how standards should be interpreted and employed for best possible transparency (Olson, 2010). Moreover, Olson (2010) emphasises the importance of completeness and accuracy of the emission data. Without careful planning, clear standards, information transparency and cross-company and cross-border cooperation by government and policy makers/regulators, the risk of "double counting" or not counting carbon emissions are high (Olson, 2010, p. 937).

Okereke, Wittneben, and Bowen (2011) suggest that carbon accounting relies on company's ability to measure and report physical carbon dioxide emissions, as this should be the main content of carbon disclosure. However, they argue that calculating emission is not as straightforward as it may seem since the science of carbon emissions measurement is still developing with a large number of different measurement protocols, emissions factors, estimations, and calculations used. The diversity and variation of methods and calculations that are freely available (Hrasky, 2011) may cause unstandardized results that will impact comparability. Knox-Hayes and Levy (2011), looking at the carbon disclosure as climate governance, conclude that the disclosure should be balanced based on various stakeholders' needs. On the other hand, the disclosure must be sufficiently detailed, relevant for investors, and

meeting compliance needs. As a result, it is a challenge for businesses to develop an information system that meets multiple needs. In addition to that, it is hard to have a carbon accounting system that is based on a measurement that is materially accurate, consistent over space and time and incorporates data certainty. Bowen and Wittneben (2011) suggest that an effective standard will have to find a balance between these three concepts by lowering uncertainty and increasing accuracy over time.

Another challenge faced by companies in disclosing carbon data is cost. Sukthomya, (2011 p.251) stated that "information associated with high cost, either information processing costs or competitive disadvantage cost". Okereke, Wittneben, and Bowen (2011) argue that since implementing the most accurate carbon measurement techniques is expensive, companies may have to make a choice between increasing accounting accuracy and saving cost. According to Jeswani (2008), high cost and lack of resources is also a barrier for the companies to implement energy efficiency and emission reduction initiatives. New equipment with new technology may be needed by the company in order to increase energy efficiency. This means high initial cost and a longer period of payback time (Jeswani, 2008). In addition to that, the availability of appropriate technology and equipment will not work without being accompanied by the expertise of that technology. If the company have to acquire outside expertise, that wold mean another additional cost to the company (Jeswani, 2008).

Reviewing the literature on climate change and carbon reporting has revealed three main barriers to effective carbon management, which are (i) lack of strong and policy framework, (ii) uncertainty about government's action, and (iii) uncertainty about the marketplace (Okereke, 2007). In addressing the first barrier, Okereke (2007) indicates that the majority of climate proactive companies have criticised the nonexistence of a clear-cut, long-term and robust policy framework. This barrier imposes acute shortcomings on the array of decisions and choices that companies could make on their climate strategies such as the high up-front investments in low carbon technologies, change of energy infrastructure, research and development of alternative technologies, scale-up existing investments in products and promote a wider and more mature level in business operations (Papathanassiou and Anderson, 2001).

The second barrier, uncertainty about political stability and government's action on the issue of climate change has placed many companies in a difficult situation when

choosing between a ranges of alternative courses of corporate climate strategies. These comprise differences in the low-carbon regulations and market mechanisms (including the uncertainties about the stability of energy prices) imposed by governments, authorities and institutions at the international, national and local levels (Okereke, 2007). The third barrier highlighted the uncertainty of the marketplace in responding to specific environmental products and services including public awareness and commitment, economy performance, willingness to reward and pay premium for environmentally friendly products, forecasting price of carbon, purchasing power of the general public, and the availability alternatives of energy, green technology and environmentally products (Papathanassiou and Anderson, 2001; Adamson, 2003).

According to Schmidheiny (1992) forging a more collaborative relationship between business and government on environmental issues is important for a change in course for businesses and a shift away from regulators imperative through mandatory regulation enforcement. Through collaboration initiatives, more responsible and proactive business entities toward green technology and less carbon and greenhouse gas emissions can be achieved (Okereke, et al., 2012).

2.5 CONCLUSION

The review of the literature demonstrates some limitation and gap from previous studies. Among other thing, previous studies concentrate more on voluntary carbon reporting and the analysis of data are towards quantitative method. With the introduction of MCRR, investigation on the mandatory carbon reporting is necessary especially in the UK context.

Despite that understanding motivation and barrier is important to understand corporate response as well strategies for improvement (Jeswani, 2008), not many investigations are carried out in this area. On the other hand, a substantial amount of studies is found to focus on the company's characteristics that influence the companies' decision to disclose. More importantly, none of the previous studies are found to investigate the approach used by the companies in implementing their carbon disclosure. The limited studies are also found related to issues faced by companies especially in their effort to comply with statutory requirements.

The study is therefore hoped to be able to narrow the gap found in the previous studies and extend the existing literature, especially in this area. The next chapter will discuss the theoretical framework applied in this study.

CHAPTER 3: THEORETICAL FRAMEWORK

3.1 INTRODUCTION

This chapter explains the theoretical framework employed in this study. The chapter commences with a discussion of theories that have been used in previous climate change and carbon related studies. Next, the chapter identifies the choice of theory to be used in the study together with the rationale behind the choice. The explanation of the theories chosen is then provided in the following sections.

3.2 THEORIES USED IN THE EXISTING CARBON REPORTING STUDIES

As mentioned in Chapter 1, the common theories used in the environment and CSR related studies are legitimacy theory, stakeholder theory, institutional theory and impression management. Legitimacy theory is a dominant theory in the social and environmental accounting discipline, including climate change and carbon reporting as it has become one of the most cited theories within the area (Hooghiemstra, 2000; Tilling, 2004). The theory suggests that companies believe that their engagement in climate change and carbon reporting helps to preserve legitimacy in times of crisis or threat. It has been suggested that this is because it is perceived that adherence to a social agenda may help companies maintain public support for their activities (Brønn, and Vidaver-Cohen, 2009). Therefore researchers like Clarke and Gibson-sweet (1998) hypothesised that companies operating in sectors with high environmental impact will use environmental disclosures to manage the legitimacy and reputation problems that arise from the damaging impact of their operations.

Previously, many researchers have used legitimacy theory to explain the voluntary reporting of social and environmental responsibility, including carbon reporting (e.g: Guthrie and Parker, 1989; Deegan and Rankin, 1996; Campbell, Craven and Shrives, 2003; Van Der Laan, 2009; Buniamin, 2010; Hrasky, 2011; Gallego-A´ lvarez, Rodrı´guez-Domı´nguez, and Garcı´a-Sa´nchez, 2011; Pellegrino and Lodhia, 2012). One of the reasons given is that, legitimacy theory is believed to offer a powerful mechanism for understanding voluntary social and environmental disclosures made by corporations (Tilling, 2004). Besides voluntary reporting, legitimacy theory has also been used in various studies on companies' mandatory reporting (see Criado-Jiménez

et al., 2008; Mobus, 2005), even though none of them covers mandatory carbon reporting.

Organizations strive for legitimacy because being legitimate means that the organizations are socially accepted and their performance and activities are judged to be fair and worthy to be supported (García-ayuso and Larrinaga 2003). Therefore, maintaining legitimacy is vital in order to prevent the society from revoking the 'licence' to operate if the company is perceived to be unsatisfactory and operating in an unacceptable manner (Deegan 2002).

Besides legitimacy theory, stakeholder theory is also widely used to explain voluntary environmental reporting in the literature (see Husillos and Álvarez-Gil, 2008; Sprengel and Busch, 2011; Cotter and Najah, 2012; Comyns and Figge 2015). This is because stakeholders' pressure is identified as one of the key drivers of why organizations report environmental information voluntarily; especially with the increasing interest and awareness of global climate change (Comyns and Figge 2015). The increase in interest and awareness thus changes stakeholders' expectations in organizations' reporting. Similar to legitimacy theory, stakeholder theory considers stakeholders' approval to be vital for the existence and survival of the organisation. Consequently, company disclosure is seen as a means of communication between the company and its stakeholders in order to negotiate stakeholder approval (Gray et al. 1995). Other examples of literature in carbon disclosure that use stakeholder theory includes Cotter and Najah (2012) and Luo, Tang and Lan (2013). Cotter et. al (2012) investigates the influence of institutional investors in corporate climate change disclosure, and the later examines the impact of resource constraints in the variation of carbon disclosure between developing and developed countries.

A small number of studies use stakeholder theory and legitimacy theory together. Gray, Kouhy and Lavers (1995) use the combination of stakeholder theory, legitimacy theory and political economy theory to provide some interpretation of the patterns of the empirical literature on CSR. Zhang et.al (2012), use a combination of stakeholder theory and legitimacy theory to explain the determinants of Australian firms' GHG emission disclosure practices under the CDP.

Institutional theory has also been used in environmental and climate change studies. The institutional theory provides the basis for studying how external pressures (such

as regulation and shareholders) impact organizational behaviour (Doshi, Dowell and Toffel, 2012). Unlike legitimacy theory, the institutional theory is better suited for research that seeks to explain the pressure on reporting entities in both voluntary and mandatory environments. This is because, in a voluntary environment, companies tend to make disclosures when the normative pressure such as social obligation is strong (Crawford and Williams, 2010). In mandatory reporting, coercive isomorphism can be used to explain companies' compliance behaviour towards regulation. Coercive isomorphism occurs when organizations have to change following the enforcement by external sources such as a powerful constituent, government regulation, certification body, politically powerful referent groups, or a powerful stakeholder (Tuttle and Dillard, 2007). On the hand, the existing legislation has to be powerful enough to motivate or pressure them to comply, otherwise, companies are more likely to dismiss or ignore institutional rules (Oliver, 1991).

Mostly, this theory is used to explain the impact of institutional pressure on reporting. For instance, Aguiar (2009), uses institutional theory in analysing the impact of environmental policy instruments (the UK Emissions Trading Scheme - UK ETS) on global climate change disclosures. Institutional theory has also often been applied in this area of studies, together with other theories such as legitimacy, impression management, socio political theory and political economy theory. For instance, Matsumura et al. (2011) uses political economy theory to predict the likelihood of carbon emission disclosures by firms that are more environmentally proactive, and then draw on socio-political theories to predict the likelihood of carbon emission disclosures by firms that are more environmentally damaging. Further, the institutional theory has been used by them to examine the association between the proportion of industry peer firm disclosers and the likelihood of disclosing carbon emissions (Matsumura et al. , 2011, pg. 9). In addition, Luo et al. (2012) use institutional theory and other theories like legitimacy theory to investigate the motivation for voluntary carbon reporting through Carbon Disclosure Project (CDP).

Impression Management (IM) theory has also been applied in a number of CSR and environmental related studies (see Hooghiemstra, 2000; Bansal and Clelland, 2004; Mitchell, Percy and McKinlay, 2004; Criado-Jiménez et al., 2008; Solomon et al. 2013), but it has a very limited application to climate change studies (Nyberg and Wright 2012; Talbot and Boiral 2015) especially on carbon disclosure.

Impression management is about how individuals and organizations manage their image in interactions with others. Arkin and Shepperd (1989), define impression management as “the ways that individuals (or organizations) plan, adopt, and carry out the process of conveying an image of self to others” (pg. 126). Image is what and how we want others to think of or perceive us, and should accurately represent what we really are (identity). However, this is not always the case because individual and organization may manipulate their image through their representation, marketing or advertising (Fombrun, 1996).

There are also a number of studies that have used a combination of multiple theories. These studies are basically quantitative in nature and various theories are used in developing the hypothesis testing. Based on previous literature, Chithambo and Tauringana (2014) suggest that the disclosure of GHG information (especially voluntarily) can be explained from theories focusing on information asymmetry. Using a combination of agency, signalling, legitimacy and stakeholders theories, they develop their hypothesis to examine whether company-specific factors such as size, gearing and profitability; determine the extent of GHG disclosures.

Similarly, Borghei-Ghomi and Leung (2013) use a combination of voluntary disclosure theory, agency theory, stakeholder theory and legitimacy theory to investigate the determinants of voluntary GHG reporting in Australia. Another example is Hahn, Reimsbach, and Schiemann (2015), which make use of socio-political theories of disclosure, economic theory of disclosure and institutional theory in evaluating the current state of climate change related research. Another theory applied in the previous climate change and carbon disclosure related studies include institutional governance systems theory by Rankin, Windsor, and Wahyuni (2011) to help explain voluntary greenhouse gas reporting in Australia.

3.3 CHOOSING A THEORETICAL FRAMEWORK FOR THE STUDY

This study has applied an interpretive approach of analysis (refer to Chapter 4). By iteratively analysing and reconsidering the data and potential links to theory, the researcher determined that the concept of storytelling provides a good fit to explain the disclosure data in climate change and carbon reporting.

Communication is very important for an organization as it helps to bridge gaps in knowledge between the organizations with its stakeholders. According to Abdullah and

Abdul Aziz (2013), corporate communication reduces asymmetrical information. Through corporate disclosure, companies are able to communicate what they have been doing on behalf of their investors, as well to describe aspects of strategic and other planning into the future. The main reason for the choice of storytelling theory is because the researcher believes that communication does not occur in a vacuum, but is used by management to carry messages to intended audience. For instance, by reporting that the company has been awarded by ISO 14001 offers a message that the company is environmentally sensitive and attentive to environmental issues (Potoski and Prakash, 2005). In the case of carbon disclosure, calculating emissions figures using methodology and conversion factors recommended by DEFRA may provide convincing evidence that the organisation is seeking to comply with MCRR.

Developing and delivering corporate message is the focal point of storytelling concept (Berry, 2001; Schultz et al, 2002; Bruner, 2003; Marzec, 2007; Gill, 2011, 2014). The message delivered to the audience regarding the organization (Berry, 2001; Schultz et al, 2002;Bruner, 2003; Marzec, 2007; Gill, 2011, 2014) may involve crafting a story regarding activities, events, morality, relationship, action or strategies that taken place historically, at present or to be implemented in the future (Boje, 1991; Dowling, 2006; Marzec, 2007; Gill, 2014). Revealing disclosure of climate change and carbon emissions can be seen to take the form of a story that incorporates many of the attributes listed above. The organisation is able to present information on the impact of its activities on the environment through carbon emissions, as part of a textual story which seeks to provide a convincing explanation of their actions and strategies to manage and mitigate these effects. It is also possible to use such stories to project moral behaviour as part of the disclosure commentary provided to stakeholders. The company's commitment to knowledge sharing in an effort to increase awareness of climate change among stakeholders and society can be used as an implicit if not explicit theme.

The disclosure of activities, events, morality, relationship, action or strategies reported in climate change and carbon disclosure is also found to include information from different time dimension; as proposed by the theory's framework. For instance, company's disclosure includes previous and current emission data; and future strategies to reduce emissions. Matching the available data with available theories, the researcher believes that the storytelling concept provides an appropriate theoretical framework to help in explaining the research data.

Choosing storytelling theory does not mean rejection of previous theories used. Rather, the storytelling concept also offers an innovative approach to reporting in this area that complements previously used theories such as legitimacy and impression management. This form another reason for choosing this theory as a theoretical framework for this study. As stated earlier, legitimacy theory views climate change and carbon disclosure as a mean to maintain and repair legitimacy especially during the occurrence of predicaments (Clarke and Gibson-sweet, 1998; (Hooghiemstra, 2000; Bronn, Vidaver and Cohen, 2009). In another word, the end goal of legitimacy theory is similar to storytelling, where the disclosure is used to influence stakeholders' perception towards organization by creating a new point-of-view or reinforces an opinion or behaviour (Schultz et al, 2002; Gill, 2014). The following section 3.5 further explain how storytelling theory is used for legitimacy purpose.

As mentioned earlier, IM theory was also been used in the environmental studies. Early impression management theorists (Arkin, 1981; Schlenker, 1980, 1982; Tetlock and Manstead, 1985 and Tedeschi and Melburg, 1984) use the term 'assertive' and 'defensive' to distinguish between enhancing image through favourable states and protecting against threats to image triggered by negative states. Consequently, it was argued that disclosure based on impression management motives would be biased and selective towards positive elements; so that the image of the companies is secured (Merkl-Davies and Brennan, 2007).

Similar to storytelling theory, previous studies on the application of IM in corporate reporting suggest that companies are applying IM tactics for a specific purpose such as to protect companies' image and reputation in the occurrence of the bad events. Therefore each company would apply different tactics that suit their reporting purpose the most, thus may significantly vary from each other. Consequently, the IM perspective does not help the researcher to fulfil the objective of the research of finding a common stories or disclosures included in companies' climate change and carbon disclosure. Further, Brennan and Merkl-Davies (2013) suggest that IM viewed as falling into the broad category of voluntary disclosure. Therefore, similar legitimacy theory, it may not fit well in explaining the disclosure under the mandatory environment.

IM theory suggests that companies make disclosure in order to influence audience perception, and thus reporting tends to be biased towards positive disclosure (Brennan and Merkl-Davies, 2013). On the other hand, the finding of the previous studies show that the motives behind the disclosure (refer to Chapter 2) is not only about impressing

the audience about the content of the disclosure; but the act of disclosing is partly for statutory compliance (Freedman and Jaggi, 2005; Brammer and Pavelin, 2006; Lewis et al, 2014). To comply, companies have to disclosure according to what is required, which means both positive and negative elements. For example, in showing emissions performance, companies have to be transparent on the emissions number regardless of whether it reflects potential increases or decreases in their image, compared to prior years. Companies have also need to be transparent on how they calculate their emissions figure (Gentil, Aoustin, and Christensen, 2009; CDSB, 2010) and justify any disability towards reporting a complete data (DEFRA, 2013).

Sharing similar goals with legitimacy and impression management theory; storytelling theory fit better in this study because it complements those theories by providing broader elements in exploring carbon reporting practice. This is achieved by interpreting the message behind the reporting, instead of treating them as a mere 'ticking the box' items. Besides, the use of storytelling is also encouraged by the Financial Reporting Council (FRC), where in their latest guidelines to Strategic Report stated that they "encourage companies to experiment and be innovative in the drafting of their annual reports, presenting narrative information in a way that enables them to best tell their story" (FRC, 2014 p.6). In the latest development, Carbon Disclosure Standard Board (CDSB) also support the statement of FRC by stating that corporate communication can be enhanced through storytelling.

> *"'While different businesses have different stories to tell,* ***communication is enhanced by storytelling*** *taking place within a common, shared framework" (CDSB, 2016 p. 4)*

Based on the above discussion, the storytelling concept is chosen as it is felt to be capable of explaining the captured data effectively, as well as providing an appropriate framework to support the objectives of the research. Even though storytelling is not new, research on disclosure based corporate storytelling is very limited. This theory has been much more commonly applied in the management field. Storytelling is a relatively new perspective in examining specific reports such as environmental or carbon reporting. Based on the literature review as reported in Chapter 2, it was found that the only research that applies storytelling to the corporate reporting documents is by Spear and Roper (2013), who use storytelling in as part of an impression management perspective. Despite its rarity of use, this theory offers valuable insights in exploring company documents. It has been argued that the storytelling concept has

been used quite extensively by companies for different purposes as shown in Table 3.1 in the next section.

The details regarding storytelling as a lens and how it is applied in the research are explained in the following sections.

3.4 STORYTELLING THEORY

Morgan and Dennehy (1970) suggest that sometimes stories are more powerful than numbers as it makes information easy to “remember and believable”. Boje et al (2006) illustrate that numbers play an important role in a company’s performance story; thus number and narratives complement each other in creating a good story. The impact of the story is more powerful when the listener or reader can imagine the scenario, and connect it to their emotions and experience (Adamson et al, 2006; Morgan and Dennehy, 2006).There are many ways previous studies have defined what a story is. Fog, Budtz, and Yakaboylu (2005) suggest that there is no fixed formula to determine what constitutes a story and what makes a story good. On the other hand, they suggest that some basic elements in a story include message, conflicts, plot and characters. In addition, a story usually (traditional concept) consists of three parts, which are a beginning, middle and end (Maclean et al., 2012; Denning, 2006; Fog et al, 2005). Corporate stories on the other hand, might not possess the above-mentioned structure; especially in their corporate reporting.

Adamson, Pine, Steenhoven, and Kroupa (2006) suggest that corporate stories “crystallize common value and beliefs” and make readers aware of the common issues in their organisations. In the case where “command and control” approach is no longer effective, management can switch to stories about adapting to challenges (Dennings, 2006) and potentially revitalise the way business is carried out (Kroupa, 2006).

Corporate storytelling is often associated and defined with reference to narratives. Whilst there are debates and vague distinctions between narrative and storytelling, many researchers do not differentiate between the two and use them interchangeably (see Denning, 2006; Küpers, 2013; and Marzec, 2007; McLellan, 2006). Reviewing the literature on corporate storytelling, there is no standardised definition of what corporate storytelling is, but rather the definition reflects the purpose or the use of the storytelling in the researched subject. The following are examples of definitions of corporate storytelling from previous studies:

"A story is defined as explanations offered by multiple same-firm respondents to explain firm behaviours, processes, or relationships." (Berry, 2001 pg. 59)

*"..the process of developing and delivering an organisation's message by using narration about people, the organisation, the past, visions for the future, social bonding and work itself in order to create a new point-of-view or reinforces an opinion or behaviour." (*Gill 2014, p. 3)

"…a corporate story is a narrative tool that tells the tale of a company's strategy in action. It is a clear, structured, compelling articulation of "who we are" and "where we're headed" that rallies emotional and rational support from stakeholders." (Marzec, 2007)

"[A corporate story] is a realistic and relevant description of an organization, created in an open dialogue with stakeholders the organization depends upon." (Schultz, Hatch, Larsen and Van Riel, 2002)

Stories may influence an audience's perception in many ways. Boje (1991 p. 106) suggests that corporate stories form part of "organization-wide information-processing network" which are told to "formulate recognizable, cogent, defensible, and seemingly rational collective accounts that are performed among stakeholders to make sense of an equivocal situation". Just like in a courtroom, the stories will "serve as precedent for individual assumption, decision, and action" (Boje, 1991 p. 106). Using the common information system model of input, process, storage and output, the Boje (1991) idea of storytelling system is illustrated by the researcher in the following Figure 3.1.

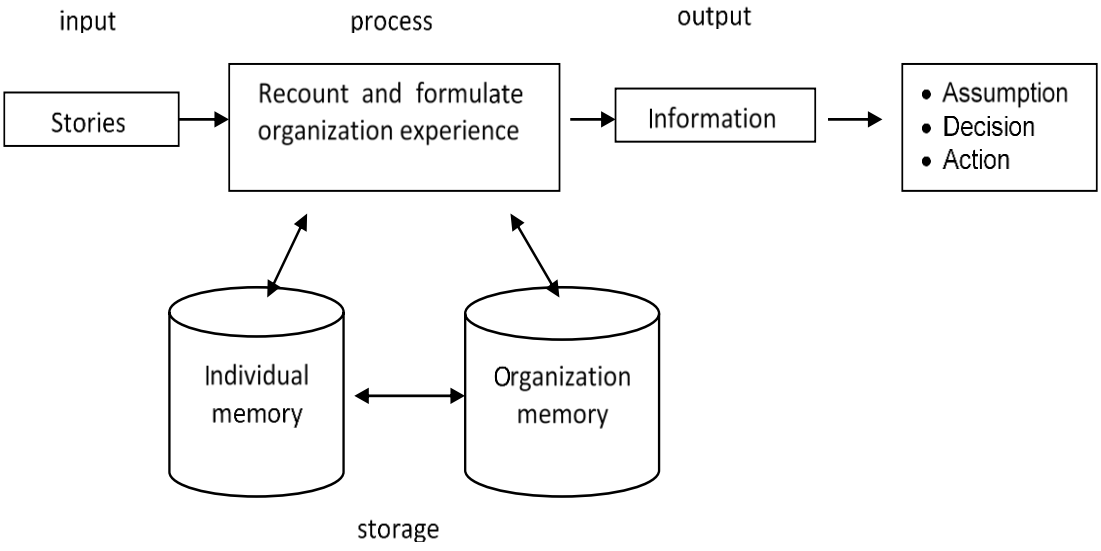


Figure 3.1: A storytelling system

The above figure illustrates the stories as the input for the audience to whom the stories are targeted. Here the information is used to form stories which are matched to some degree with individual experiences and previous stories presented by the organization. The audience then synthesize the new and the existing data and produce the new information that would impact their assumptions, decisions and actions.

According to Berry (2001), a story of organizational behaviour may include more than one explanation, and sometimes these may be contrasting (such as bad and good behaviour). Similarly, the audience may have different interpretations of the meaning of the story (Berry, 2001; Boje, 1991). As a result, the impact of the stories to the audience's assumption, decision and action may vary from one to another.

Company reports are viewed and used by different users for different purposes, which includes communicating company's data through the use of story space to tell stories to influence the targeted audience. Story space in a drama is the narrative boundaries where the story experience is possible (Magerko, 2005). Boje and Baskins (2011) highlight six scales of story space that influence the narrative; namely the individual; small group/family; organization/community; market/profession; nation; and religion/philosophy.

In relation to climate change and carbon story, the story space would be the individual companies, company as a group (such as FTSE350, listed companies, part of the industry/sector), and company as part of the community as well as the nation. In terms of targeted audience, the climate change and carbon information would interest both internal and external users such as management, employees, supplier, government, and most importantly, the shareholders (Cormier et al. 2004; Milne et al. 2002; Brønn and Vidaver-Cohen, 2009; Zhou, 2010).

Reissner (2011), investigates three patterns of stories that organisational actors use to make sense of their experiences of organisational change, which includes stories of "the good old days"; stories of deception, taboo and silence; and stories of influence. She found that each of these patterns reflects one way in which organisational actors make sense of change and in which they use their stories for different purposes.

Dowling (2006) suggest that stories are told across the three dimensions of the past (retrospective), current, and future (prospective) events. For the purpose of substantiating reputation through storytelling, Dowling (2006) emphasises the balance

between these three dimensions of stories. The author claims that “a heavy emphasis on past achievements may suggest that the company is past its prime”, while “a heavy emphasis on the current situation may resemble a report card”. On the other hand, “a heavy emphasis on the future may sound too prognostic” (p. 85).

Boje and Baskin (2011) theorised storytelling as an intra-play of retrospective narrative, living stories space presentness (current) and ante-narrative (prospective). The presentness is the story around “what is happening now” (Walker, 2011 p. 68), and the living space is about the relationship between storytellers and listeners who are working together to shape and transform ante-narrative (Walker, 2011). According to Baskin (2004), ante-narrative is an explanation of “what might have happened”, which later turn into narrative when “it did happen”. Based on Boje’s definition, Walker (2011) suggests that a story is ante-narrative when told without a proper plot sequence and mediated coherence (p. 69). In addition to that, in his previous study, Boje (1991, p.131) suggest that stories contain story-line patterns in order for the storyteller to “model either a past, unfolding, or anticipated experience”. Those eight categories of the story-line patterns used by Boje (1991) to catalogue the stories are as the following:

P1: Story-line pattern that is still going on.
P2: Story-line pattern that is expected to repeat.
P3: Story-line pattern is the same as another pattern.
P4: Story-line pattern that will no longer repeat.
P5: Story-line pattern that is changing.
P6: Story-line pattern that is unfolding.
P7: Story-line pattern that is being challenged.
P8: Story-line pattern that was not expected.

In investigating corporate reporting, these patterns are useful in explaining the choice of the story being disclosed. For example, some storylines reported by the companies in order to show compliance with certain regulations will be expected to repeat; as long as the companies are bound to the obligation to comply.

According to Boje (1991 p. 115), a story sometimes can be a terse and as short as saying “You know the story!". He hypothesised that, in an organization’s internal communication, the terser the story is, “the more shared the understanding of the social context, since insiders know what to leave to the imagination”. It also acts as a

code which is only understood by some, thus limiting the understanding of the story by unnecessary (or wrong) people.

From the above discussion of the storytelling concept, it can be concluded that the message is a focal point in creating a corporate story; while the ultimate goal is influencing audience's opinion and behaviour. The corporate story is unique that it could be long or short; and may not follow the common BME (beginning, middle, end) concept. Corporate storytelling however, comprises the message from event that occurs across the time dimension of retrospective, current and prospective; and the storylines may come in different patterns such as repetitive, expected and changing. In organizations, corporate stories told are processed in an information system, where the previous and current stories were synthesised and analysed together by individual and organization in order to produce useful information that influences their decision and action toward the organization.

3.5 THE USE OF CORPORATE STORYTELLING

In organizations, stories are used for a variety of purposes and for different types of audience. Boyce (1996) contends that storytelling can be applied for multiple purposes by the organisations such as expressing the organizational experience of members or clients; confirming the shared experiences and the shared meaning of organizational members and groups within the organization; as well as orienting and socializing new organizational members. In addition, storytelling can also be used for amending and altering the organizational reality; developing, sharpening and renewing the sense of purpose held by organizational members; preparing a group (or groups) for planning, implementing plans and decision making in line with shared purposes; and co-creating vision and strategy (Boyce,1996).

Based on a review of the literature, Table 3.1 shows the variety of purposes of corporate storytelling employed by organization.

Table 3.1: The Usage of Storytelling in Organization

Usage	Source
Establish trust (through awareness, understanding and appreciation)	Dowling (2006)
A sense making tools	Boje (1991); Boyce (1995); Berry (2001); Driver (2009); Maclean, Harvey and Chia (2011); Reissner, (2011); Kupers (2013)
Promotion, marketing and branding, promote reputation	Denning (2006); Dowling (2006); Gill (2011)
Create employees' understanding, loyalty and commitment. Improve adaptation to the organization	Brown (1982); Marzec (2007); Gill (2011); McDaniel and Malone (2015)
Maintain and rebuild legitimacy	Maclean, Harvey and Chia (2011); Garud, Schildt, and Lant (2014)
Defend or explain company's action and decision Make decisions about action	Berry (2001); Dowling (2006); Marzec (2007); Spear and Roper (2013)
Explain process and relationship	Berry (2001)
Setting future expectation	Denning (2006); Garud, Schildt, and Lant (2014)
Reinforce the mission and morality internally	Dowling (2006)
Transmitting knowledge, share experience	Denning (2006); Boyce (1996)
Help employees appreciate the customers they serve and the competitive reality in which the business operates	Marzec (2007)

3.5.1 Storytelling for establishing trust and reputation

Corporate reputation is viewed as a critical corporate asset (Gray and Balmer, 1998) that directly links to competitive advantage and success (Fombrun, 1996; Gray and Balmer, 1998). A good companies' reputation would attract customers to their product, investors to their shares, and employees to their job (Fombrun, 1996). Consequently, it leads to other financial benefits such as cost reduction, higher product price and increased profitability (Walker, 2010).

Corporate storytelling if crafted properly and wisely could help build and promote company's brand and corporate reputation (Dowling, 2006; Spear and Roper, 2013). This notion is based on empirical evidence from previous studies where stories can change people's minds; and stories are a powerful communication tactic to activate emotions and to engender trust and confidence in leaders and their companies (Dowling, 2006 p. 84). In building reputation through storytelling, van Riel and Fombrun (2007) suggest that the story should be based on three reputational themes namely;

activities, benefits and emotion (Spear and Roper, 2013). In illustrating the role of storytelling in the building of reputation, Dowling (2006) developed the following diagram:

Source: Dowling (2006 p. 86).

Figure 3.2: The Components of a Reputation Story

The combination of mission, morality, and modes of behaviour in corporate stories that resonate with the values, intuition, and self-interest of key stakeholders, will help reaffirm and update stakeholders' beliefs (Dowling, 2006 p. 86). Further, he added that stories explaining the behaviour of company based on mission and morality would create an emotional bond that fosters trust and support from stakeholders. At the end, a good corporate reputation is established when stakeholders' beliefs and feelings fit with appropriate corporate behaviour Dowling (2006).

3.5.2 Storytelling as a sensemaking tool

Organizations use storytelling to make sense of events, introduce change (Boje 1991; Reissner, 2011) and gain political advantage (Boje, 1991). According to Reissner (2011), sensemaking is a process of interpreting narrative by which organisational actors attribute meaning to unknown or unexpected events to deal with the contradiction between expectation and experience caused by organisational change (pg. 595). Therefore, sometimes certain stories are reinterpreted and revisited so as to allow the audience to match their individual memory with the institutional memory (Boje, 1991) in the storytelling system (refer Figure 3.1).

Maclean et al. (2011) suggest that stories help leaders to make sense of, narrativize and legitimate their experiences of building and managing their careers within and beyond large corporations. In this case, storytelling helps by locating time, space and context from its interactions with a fluctuating reality, and incorporating the change needed into themselves in order to create the intended image. For example, "locating the leader in situations of immense difficulty", stories told will "focus on the leader's strength, courage and fortitude" to create the image of the leader as "a hero, a person that can be seen as exceptional" (Maclean et al., 2011, p. 34). In making sense of the change, as was noted earlier, Reissner (2011) identifies three patterns of stories employed by organisational actors to make sense of organisational change: stories of good old days; stories of deception, taboo and silence; and stories of influence.

3.5.3 Storytelling that inspires engagement and stimulates action

In addition to building trust that leads to improved reputation and sensemaking; storytelling can also be utilised to engender employees loyalty and engagement (Marzec, 2007; Gill, 2011; McDaniel and Malone, 2015); as well as inspire action (Marzec, 2007). In order for the story to do the above two purposes, Marzec (2007) recommends that there should be a connection between strategic planning and strategic thinking that reflects "who we are" and "where we're headed to" (p. 26 and 28). Further, he added that positive stories are preferable and more effective in motivating employees and inspiring action. Further, Gill (2011) suggests that this type of story is not limited to gaining deeper employees' engagement, but leads to "stronger internal loyalty and enhanced reputation, both internally and externally" (p. 13).

A good story may not only engage employees, but also gain support from stakeholders in achieving corporate objectives. According to Sandercock (2003), stories of success, or of exemplary actions, serve as an inspiration when they are re-told. Therefore, as well as stories of "where we're headed to", the stories of "where we are now" or "what we have achieved" are also important to inspire and give ideas of what more is needed. Stories of success can also invoke the motivation for sustaining the success or achieving more success in the audience. Thus, the ability to tell the success stories meaningfully can inspire others to act (Sandercock, 2003).

3.5.4 Storytelling for legitimacy purpose

There is also literature that suggests storytelling is a means of gaining and maintaining legitimacy (see Boje, Gardner and Smith, 2006; Maclean, Harvey and Chia, 2011; Garud, Schildt, and Lant, 2014; Eshraghi and Taffler, 2015). For example, the study by Maclean, Harvey and Chia (2011) demonstrates that storytelling provides an effective vehicle for legitimacy-claiming by business leaders. In their study, it was evidenced that business leaders use their life-history stories to justify their success and claim legitimacy. Leaders not only use storytelling to claim legitimacy through success stories; but also through justifying their action. Study by Eshraghi and Taffler (2015) found that fund managers use storytelling to construct satisfying narratives to explain why their investments work out and justify their underperformance.

In a different angle, Boje et.al (2006) discuss the role of storytelling in the legitimation of financial performance measures used by Enron. Enron has used a rosy story using financial statement numbers to manage readers' impressions of their financial statement. As a result, organization was successfully persuaded analysts, investors, and others to believe that the financial performance and overall financial health of the organization are strong despite its opposite position (Boje et.al, 2006).

Consequently, it was perceived that the storytelling concept can be used to complement legitimacy theory in justifying the purpose, content and the presentation of corporate disclosure. The way storytelling could complement legitimacy theory is returned to and explained further in Chapter 8.

3.5.5 Other uses of storytelling

In addition to the above common usage of storytelling, Seidel and O'Mahony (2014) interestingly illustrate how storytelling can help to stimulate the idea of creating noble products by describing the details of the unmet needs of customers. For example, a story of the founder needing to access a large volume of reading material on an international flight becomes the catalyst for the invention of e-Book (Seidel and O'Mahony, 2014 p. 699).

3.6 MODES OF STORYTELLING

Corporate reporting is aimed both at internal and external users. In addition to that, different types of reporting may have different objectives and be aimed at different type of readers. For example, annual reports might focus on the story of performance and legislation compliance, while corporate social reporting may focus more on non-financial performance, aiming at creating a good ethical image and the impression of a responsible organization towards the environment and community.

In reporting carbon data, organisations not only try to show that they comply with the regulation, but at the same time make use of this disclosure as a means of influencing readers' perceptions of the organization's image and reputation. Consequently, organizations have applied many different ways of how they present their carbon reporting, so that is informative, attractive and impressive to their readers. In order to impress the reader, corporate storytelling is presented in many attractive ways. Corporate storytelling may incorporate photos, animations, colours, diagrams and audio; and be presented in a traditional paper-based or electronically such as e-book and videos. As suggested by Davison (2007), despite visual elements being regarded as "lightweight elements of the annual reporting package, it may be argued that they are on the contrary heavyweight ingredients, in the richness and potency of their messages" (p.7). With the existence of advanced technology, more visual and audio elements can be incorporated in corporate stories especially through their online reporting. Thus, online reporting is richer and more interactive, as an organization can incorporate additional elements that are not possible through paper-based and static soft copy report.

Boje (1991) highlights the fact that most corporate storytelling is done through face-to-face verbal communication. This would include day-to-day peer conversation or leader to staff communication. According to Sinclair (2005), telling the story face-to-face is one of the richest communication mediums for engaging with staff and reinforcing the organisation's brand values. The reason being is because it could promote dialogue, or symmetrical two-way communication (Sinclair, 2005). In addition to that, face-to-face story communication could give better impact to the listener as it is enriched with cues such as body language, voice tone, and inflection (Sinclair, 2005). Besides face-to-face, other modes such as e-mails, telephone conversation, and other online direct messaging can also enable two-way communication; that allows greater

communication balance between the storyteller and listener/reader, thus advancing trust (Gill, 2011).

On the other hand, Marzec (2007) highlights that the term ‘‘story’’ does not limit the tool’s application to traditional verbal and written communication channels. In the contemporary modern technology advanced era, other mass media have been widely used, such as the embodiment of narrative, photos and audio in a video, to make a more attractive story. The development of social media has also made communication and story sharing to be faster than ever. On the other hand, Sinclair (2005) claims that the social presence or media richness of stories has not been studied enough by the researcher.

Besides direct communication, Marzec (2007) also suggests that the story might be communicated indirectly and interpreted through “management decisions; recruiting, hiring and development practices; what the company values is; how it operates; how it approaches the competition; the capital investments it makes; what it promises customers; the returns it provides shareholders; and, its community stewardship.” (p. 26).

3.7 STORYTELLING FRAMEWORK FOR CLIMATE CHANGE AND CARBON REPORTING

This study looks at how organizations tell stories of change in their reporting as a response to new regulation, how organizations show their compliance with the regulation and their effort and commitments towards managing and reducing their impact towards climate change. For the purpose of this study, based on the review of the literature, the researcher defined corporate storytelling as:

> *“..the process of developing and delivering an organisation’s message by using narration about organisation (Berry, 2001; Schultz et al, 2002;Bruner, 2003; Marzec, 2007; Gill, 2011, 2014) which includes morality, behaviours, processes, relationships, action and strategy (Marzec, 2007; Berry, 2001;Dowling, 2006; Gill, 2014); which take place retrospectively, current and prospectively (Boje, 1991; Dowling, 2006; Marzec, 2007; Gill, 2014) to influence stakeholders’ perception towards organization by creating a new point-of-view or reinforces an opinion or behaviour (Schultz et al, 2002; Gill, 2014).”*

Based on the review of prior literatures and the above definition of storytelling, the researcher developed the storytelling framework for this study (see Figure 3.3 below).

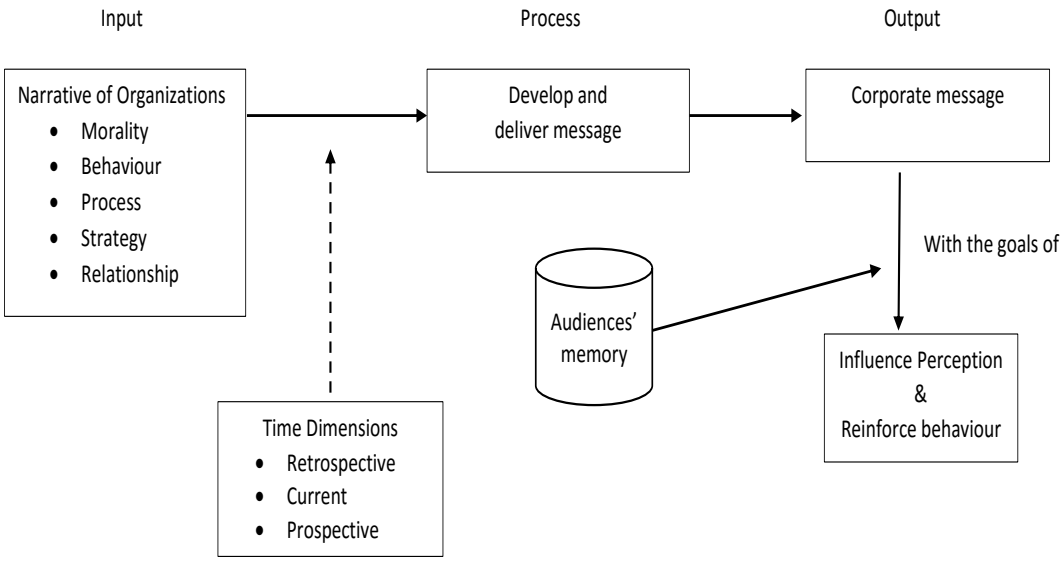


Figure 3.3: The framework of Climate Change and Carbon Storytelling

The Figure 3.3 above demonstrates that all companies' messages which include mission, morality, behaviours, process, action and strategy are encapsulated in a corporate story. It is then communicated to stakeholders' through corporate reporting such as annual reports, sustainability reports, websites and other online reporting. Stakeholders who read the report may interpret it based on their prior knowledge of the organization, or they may try to match it with the previous organization's reporting or history (Boje, 1991). The interpretation of the data by stakeholders may give impact to their impressions towards the organization, which at the end impact their actions, acceptance, and decisions towards the organization (Boje, 1991; Dowling, 2006). Collectively, stakeholders' impressions towards organizations will from a reputation (bad or good) of an organization.

Based on the conceptualised definition of storytelling outlined above, the message is the focal point in identifying and analysing the reporting of corporate climate change and carbon disclosure. The theory is used to frame and capture the messages that arise in the climate change and carbon disclosure reporting processes of organizations. While there is some commonality in the message based on the MCRR mandated disclosures there is also a degree of diversity introduced by the use of text and graphics to render the disclosure story.

3.8 CONCLUSION

Storytelling theory was chosen for this study because it is seen by the researcher as being able to support the research objective and provide insightful explanations of the research data from both: documentary and interview sources. Storytelling theory is used to identify the themes of the stories told by the sample companies in their reporting media such as annual report, sustainability report, press report, websites and other online reporting media. Besides the contents, the exploration includes the way the stories are presented to the audience. This includes a discussion of the communication and the presentation of the corporate stories that goes beyond the text and verbal; especially with the use of the advanced current technology.

Storytelling is useful to explore 'what' information is reported in climate change and carbon reporting, and 'why' such information may be selected to be reported on rather than other possible data (especially on the reporting of voluntary disclosure), as well as 'how' it is presented to the audience. The answers to these questions are encapsulated in the stories found in the companies' disclosure as reported and discussed in Chapter 6 of this thesis. The theoretical framework is also used to explain what is going on behind the reporting practice, thus forming the story behind carbon reporting (refer to Chapter 7). This includes the motivation for reporting, issues and challenges faced by the companies in order to produce their climate change and the approach use in implementing carbon reporting. The analysis uses an iterative approach to link companies' reporting with the usage and the purpose of corporate storytelling found from literatures.

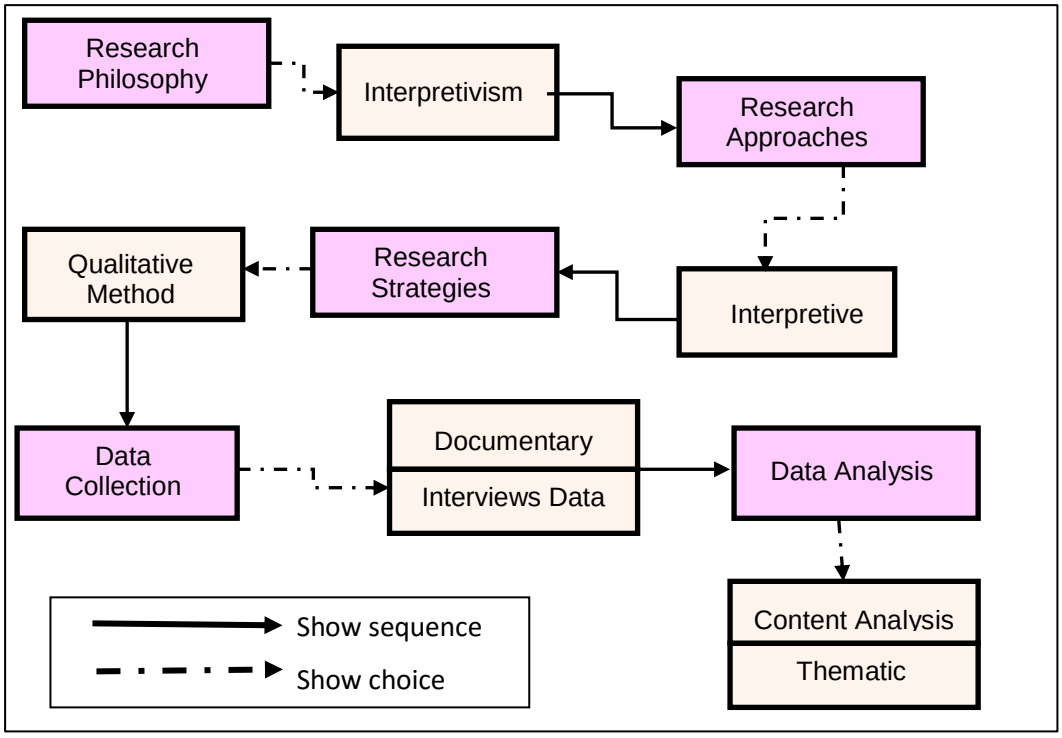
The application of the storytelling theory in corporate published documents could be found to be different from the stories told verbally. The stories might not follow a traditional story structure with a beginning, middle and end (Sandercock, 2003; Denning, 2006; Bréda, Delattre, and Ocler, 2008) but rather consist of scattered and unchronological elements. The storylines may be found to be chosen and put together based on the message intended to be delivered to the intended audience through the story theme. The previous research on storytelling concentrate more on the verbal communication occurred around the organization such as the exchange of stories between colleagues and the stories shared by the top management or individual leader to their staff. However, this has been one of the motivations for the researcher to explore the climate change and carbon reporting in a way that has not been done

before, thus expand the use of the theory into the new area of study. The following chapter will discuss the research method used in conducting this study.

CHAPTER 4: RESEARCH METHOD

4.1 INTRODUCTION

This chapter outlines the methodology adopted and research methods employed in this study. This includes the identification and discussion of broad philosophical understandings underpinning the study, the choice of methods and sources of data, research sample and approaches to data analysis. To summarise, the chapter discussion is based on the research strategies depicted in Figure 4.1 below.



Source: Researcher

Figure 4.1: Research Strategies Diagram

4.2 RESEARCH PHILOSOPHY

Within the social and environmental reporting literature (see for example Criado-Jimenez et.al, 2008; Campbell, Craven and Shrives, 2003; Van Der Laan, 2009; Buniamin, 2010 and Rankin et al, 2011) it can be attested that positivism is the dominant research philosophy employed. Such approaches include: establishing hypotheses; theory testing and is largely quantitative in nature. Most previous research

in environmental reporting has used quantitative data collection and analysis such as surveys and/or content analysis of secondary documents. On the other hand, there are few studies which are qualitative and embracing interpretivist philosophy, such as Chee Mahmood and Raman (2010), which use a case study to research carbon accounting initiatives in Malaysia. Table 4.1 shows the comparisons of the two most commonly applied research philosophies especially in business and management research; positivism and interpretivism.

Table 4.1: Comparisons of Research Philosophies

Source: Saunders et.al, (2016 p. 136)

For the purpose of this study, an interpretivist philosophy is adopted. Interpretivism is an approach used by researchers to examine, understand and interpret social life and phenomena around them with the inference “that the meaning of human action is inherent in that action” (Schwandt, 2001, p. 134) and “our knowledge of reality, including the domain of human action, is a social construction by human actors” (Walsham, 2006 p. 320). Typically, data for interpretive research is collected via qualitative methods that can provide researchers with 'rich' data to support in depth analysis and interpretation. According to Prasad and Prasad (2002), interpretive research is more appropriately viewed as a subset of qualitative research rather than

the other way around, as not all qualitative research applies interpretive inquiry. By applying a subjective lens, researchers can reveal a more in depth understanding and explanation of the issues studied. Hence, the focus of interpretive inquiry is on "understanding and interpretation" of data, rather than on "generalization and prediction" (Decrop, 2000). In the case of carbon reporting, the interpretative approach is used because interpretation is needed in order to identify the organizations' messages through their corporate storytelling. Since these messages are implicit, the meaning of the data disclosed need to be interpreted in order to understand why certain disclosures are made. Another reason for the interpretative approach is that, this study explores narratives and stories produced by organisations in order to understand the meaning of their actions; thus fitting the interpretivist epistemology of what constitute to knowledge (Saunders et.al, 2016).

In addition to the above, consistent with the ontological understanding and purpose of this research, the study used interpretivist research approaches to understand the compliance behaviour of carbon and climate change reporting. The understanding and the evaluation of company's approaches to carbon reporting implementation, their motivation, and issues and problems they faced in reporting and managing their carbon emission were achieved through getting "close to participants, enter their realities, and interpret their perceptions as appropriate" (Leitch, Hill and Harrison, 2009). Data collection, including the use of interviews and documentary evidence, will be discussed in more detail in section 4.3 below.

Applying interpretative approach, the researchers' opinions may influence the interpretation and results of their research. Consequently, the finding may be biased, different from others or 'surprising' (Bryman, 2012 p.31) since the interpretation of one researcher may different from another. In minimising the researcher's bias in interpreting the data for this study, few approached were applied by the researcher. One the methods used is through triangulation, where data are verified through other mechanisms of data collection. According to (Jick, 1979 p.602), triangulation is a mean for cross validation "when two or more distinct methods are found to be congruent and yield comparable data". In this study for example, the information on companies' action to reduce emission found in disclosure were cross-checked by interview. In addition to triangulation, peer review was also applied; for example in interpreting the message of companies' disclosure. In this study, the peer reviews are done by other PhD colleagues from both, the same and outside of the field of the study. Further, the researcher also applies reflexivity where "researcher be reflective about the

implications of the method chosen, values, biases and decisions for the knowledge" (Bryman, 2012 p.393). Reflexivity is important in an interpretative study since the researcher is the main 'instruments' in data collection and analysis (Watt, 2007). In addition to the above, the bias is also minimised through avoiding leading questions in interview.

4.3 METHOD OF DATA COLLECTION

This study has employed a qualitative method for data collection. A qualitative method was used as it gives an opportunity for the researcher to go deep to gain an understanding of underlying reasons and motivations; to provide insights into the setting of a problem, generating ideas; and uncover prevalent trends in thought and opinion (Park and Park, 2016). In this study, two sources are used for data collection; documents and semi-structured interviews. The sequence of processes involved in data collection and analysis are depicted in the following Figure 4.2.

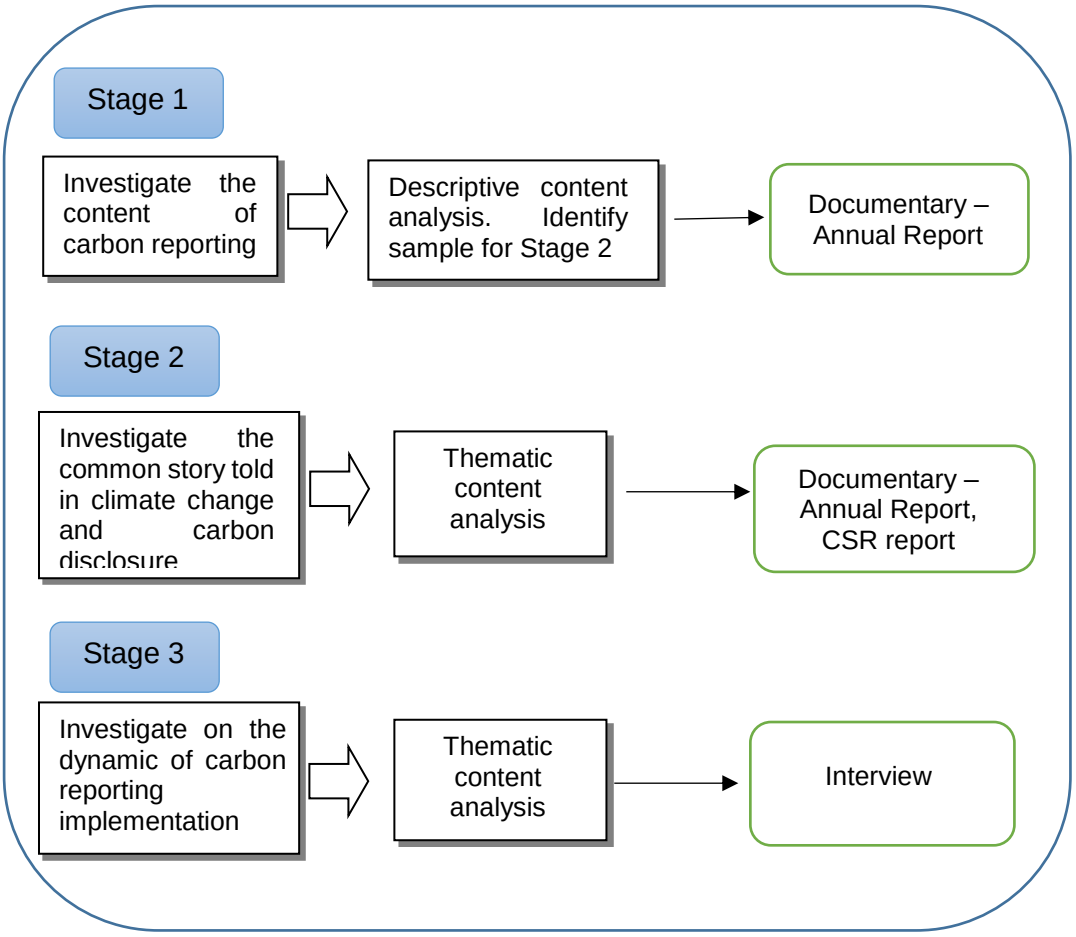


Figure 4.2: The Sequential Research Design

Source: Researcher

These different stages of research are used in order to ensure that sufficient data is collected so that the research questions can be answered. In the first stage of data collection, the author explored the FTSE 350 companies' annual reports in order to investigate the content of carbon information reported for both, before and after the introduction of MCRR. The data collected based on the disclosure index adapted from DEFRA guideline 2009 as in Table 4.8. The data is then analysed and reported in Chapter 5 of this thesis. The method used for data collection and analysis in this stage are used to answer research question 1 (RQ1), which is to investigate how the organizations' carbon disclosure change in response to the introduction of MCRR.

In the second stage, twelve companies are chosen in order to investigate more deeply the content of carbon disclosure through the storytelling lens. Even though MCRR requires companies to disclose carbon information in annual reports, many companies make use of other communication media to disclose this data. For some companies,

annual report disclosure is limited to mandatory data while other disclosures provide more details on voluntary items. Therefore, the source of data for this stage is not limited to their annual report, but also CSR or Sustainability Report and their online reporting through their websites. The selection criteria of the companies are discussed in section 4.4. This method is chosen in order to answer research question 2 (RQ2), which is what are the common stories and messages communicated by organizations in their carbon disclosure. The analysis done is reported in Chapter 6.

Finally, in stage 3, interviews were conducted with companies' representatives, government agencies and consultants to get a deeper understanding of the carbon and climate change disclosure practice by affected companies in response to the new regulation on carbon reporting. This method is chosen in order to answer research question 3 (RQ3) of what are motivations, challenges and implementation approach used by organizations in disclosing carbon emission.

4.3.1 Documentary Data Collection

Bailey (1994) described documentary methods as the analysis of documents that contain information about the phenomenon we wish to study. This method is used to categorise, investigate, interpret and identify the limitations of physical sources, most commonly written documents whether in the private or public domain (Payne and Payne, 2004).

The advantage of using this documentary research method is that, it is inexpensive and a time saving data source (Appleton and Cowley, 1997). According to Saunders, Lewis and Thornhill (2007), secondary data provides the possibility of undertaking longitudinal and comparative studies; which suit the objectives of this study. Another advantage of this method stated by Saunders et al (2007) is that the data source is permanent and available in a way that can be checked easily by others. Given these advantages, a bigger sample is often possible to be used to represent the population.

In investigating the extent of the social and environmental reporting (voluntary or mandatory), the annual reports of organizations listed on stock exchanges have often become a source of raw data (Guthrie and Abeysekera, 2006; Buniamin, 2010). They have been widely used by previous researchers in determining the extent and nature of reporting practices (Adams and Harte, 1998; Frost, 2007; Gray et al.,1995; Guthrie

and Parker, 1990; Hardy and Frost, 2001; Wilmshurst and Frost, 2000). Alongside the availability and accessibility reasons, annual reports are used because it is the main document prepared by companies (Gray and Bebbington, 2000), and companies use annual reports as the main communication tool to disseminate information, including environmental information (Gray et al, 1995). Annual reports provide a 'snapshot' of the corporate management mindset (Gray et al, 1995) and a way for organizations to establish an image through voluntary reporting (Hines, 1989).

The use of annual reports to compare the voluntary disclosure and mandatory disclosure should reflect the impact of the introduction of MCRR in the companies reporting behaviour; particularly the content and the presentation of the report. This helps in answering first research objective of the study (please refer to Chapter 1). The main justification of the use of annual report in Stage 1 is because MCRR required carbon information to be disclosed in the companies' annual report. As stated by Cowan and Gadenne (2005), the inclusion of mandatory reporting requirements in the annual report should provide users of the annual report with an account of the entity's compliance with regulation over the reporting period.

In order to achieve this objective, both years' carbon reporting were compared against DEFRA carbon reporting guidelines (2009). The 2009 guidelines are used as it can accommodate both the 2010/11 and 2013/2014 reporting. The 2013 guidelines provide a more detailed explanation of the mandatory items with a little change in the presentation, but not the suggested contents. The 2009 guidelines separate the suggested content into emissions disclosure and explanatory disclosure as shown in Table 4.7. For the purposes of the analysis undertaken in this thesis, the guidelines suggested content has been translated into a disclosure index which is shown in Table 4.8.

Before MCRR, there are several requirements on organisations in the UK which require them to collect data and report on their emissions as part of the objective of improving energy efficiency, such as the EU ETS and the CRC (DEFRA, 2010). According to DEFRA (2010 pg. 11) "although these various schemes require that the organisations covered measure and report on certain parts of their emissions footprints, reporting is not the main aim of any of these schemes but rather a means to the achievement of emissions reductions". The same is also true for MCRR, as alongside aims for transparency of the impact of companies' activity, MCRR is also hoped to drive organisations to reduce their emissions.

In stage 2, the exploration of the corporate stories through climate change and carbon reporting was extended to documentary analysis beyond the annual report. In this stage, this method is used to answer research objective 2 on the story themes of climate change and carbon reporting. The use of multiple documents was previously used by researchers. For instance, Aguiar (2009), in investigating the impact of the UK Emissions Trading Scheme (UK ETS) on global climate change disclosures, uses both stand-alone (SA) and annual reports (AR) during 2000 – 2004. The source of documents explored includes specific social and environmental disclosures such as CSR reports and equivalents, websites, blogs or other companies' online reporting. Voluntarily, many companies report their emissions related data in their CSR and equivalent reports. Even after the introduction of MCRR, those companies continue to report those data in the stand alone documents and their online reporting as an addition to their annual report. In fact, for some companies, stand-alone documents and websites provides further and more detailed information as compared to the annual reports.

4.3.2 Semi-structured Interview

The second method of data collection used was semi-structured interviews. A semi-structured interview "is a verbal interchange where one person, the interviewer, attempts to elicit information from another person by asking questions" (Longhurst, 2003 pg. 103). The reason why the method of semi-structured interviews is chosen by the researcher is because it is well suited for the exploration of the perceptions and opinions of respondents regarding complex and sometimes sensitive issues, and enable probing for more information and clarification of answers (Barriball and While, 1994; Fylan, 2005). In semi-structured interviews, the researcher prepares a list of questions on specific topics (interview guide). However, during the interview, questions may not follow exactly the interview guide and other questions not included can be asked as the interviewer picks up on things said by the interviewee (Fylan, 2005; Bryman and Bell, 2007). The questions prepared usually are open ended and the sequence of questions asked may vary among interviewees.

In this research project, this method was used to achieve research objective 3, which is to understand the dynamic of reasons or motivations that driven companies to report their carbon data voluntarily and to comply with MCRR; the issues and problem faced by them in collecting and reporting carbon data; how MCRR has changed their carbon

reporting and their reduction initiatives; as well as their perception and suggestions on mandatory requirements implementation. All of these objectives cannot be achieved by reviewing documents, thus interviews are useful because detailed explanation and clarification can be given by both interviewee and interviewers.

In achieving the objectives of the interview, the researcher has employed face- to- face interviews, telephone interviews and Skype interviews. Using this technique, the researcher prepared an interview guide (Appendix 5) with the list of areas for open-ended questions to be asked to the interviewees. Some questions cover the research objectives and some confirmation and justification questions related to what the companies have reported in their published documents and websites. Therefore, the result from secondary data will be analysed first before the interview is carried out.

The strengths of the interview method, especially semi-structured interview include the flexibility in terms of the questions to be asked within the topics and its sequence, the opportunity to get in-depth information on the subject matter, as well as building up a rapport and networking with the participants (Bryman and Bell, 2007). This method could offer a more comfortable environment to both interviewer and interviewee as it is more conversational informal in tone (Longhurst, 2003). This method also allows questioning to be guided in the way that the researcher wants and points can be clarified easily and clearly (Frey and Oishi, 1995). Since the interviewer can prepare the questions before hand, the interview will look more prepared and competent during the interview session (Cohen and Crabtree, 2006). Other advantages as quoted by Barriball and While (1994) include the potential of having a higher response rate compared to a survey approach, facilitating comparability by ensuring that all questions are answered by each respondent, and providing the opportunity to evaluate the validity of respondents' answers through non-verbal observations.

4.4 SAMPLE AND POPULATION

4.4.1 Research Participants for Stage 1

In the first stage, in order to examine the impact of the Mandatory Carbon Reporting Requirements (MCRR) on the greenhouse gas (GHG) disclosure, the content analysis involved the annual report of the UK FTSE350 companies. The UK companies were chosen for this study, as the UK is the first country that makes carbon disclosures compulsory in the annual report. However, firms in the financial sector are excluded

from this study because they are heavily regulated (El-Faitouri, 2012) and are subject to different disclosure requirements that may significantly affect their policies, disclosure and structures (Aburaya, 2012; Duraya, 2011; Mangena and Taurinaga, 2007; Tauringana and Chithambo, 2014). Furthermore, the nature and business activities of these firms are less comparable to others (Duraya, 2011). The financial companies include banks, insurance companies, investment and unit trust, and real estate companies are therefore excluded.

In comparing the reporting between voluntary and mandatory, cross sectional comparisons were used. Two comparison years chosen were:

- Voluntary period – Annual reports for years ending in 2010/2011.
- First mandatory period – Annual reports for years ending on 30/9/2013 to 29/9/2014.

The 2010/11 annual reports are chosen as the voluntary year because the Department for Environment, Food and Rural Affair (DEFRA) has produced first voluntary guidelines for measuring and reporting carbon emissions in September 2009. With the existence of such guidelines, some organizations might have their first attempts to reporting their carbon emissions in the following fiscal year ending 2010/11. As reported by Tauringana and Chithambo (2014), the increase in GHG disclosure for the year 2010 impliedly shows that the issuance of this guidelines had a positive effect on GHG disclosure. The year prior to the introduction of the legislation is not chosen (2012/13) as MCCR was announced in June 2012, therefore the GHG disclosure in that particular year is assumed to be affected by the announcement; thus does not reflect a pure voluntarily disclosure (not affected by the introduction of new legislation). Therefore, the 2010/2011 is viewed by the researcher as a perfect time to explore the cross sectional comparison of disclosure because the voluntary disclosure is at the peak with the introduction of the first reporting guidelines. On the other hand, MCRR was mandated on August 2013. The first mandatory reporting year is for the year ending on or after 30 September 2013. Therefore, for the companies with fiscal year ending 30/9/2013 to 31/12/2013, the first MCRR year will be 2013. On the other hand, for the companies with the accounting period ended after 31 December, the first MCRR year will be 2014.

Edelman and Suchman (1997) suggest that regulation is a mean to control organizations; and compliance with this regulation is the organizational responses to regulation. Therefore the introduction of MCRR with its new guidelines from DEFRA

is speculated to change the quantity and the quality of the disclosure; as a companies' response to comply with the regulation (Criado-Jimenez et al, 2008). One of the reasons is that compliance to regulation give positive impact to stakeholders' perception (Lewis et al, 2014) and help maintaining and improving their legitimacy. Therefore these two years shared a common ground of having a 'trigger' for better disclosure, thus they are more comparable, and the comparison is more credible and valid.

Choosing the final sample for this stage involved a number of steps. First, the FTSE 350 companies are divided into index FTSE 100 and FTSE 250. Companies chosen need to be in the same category of the index for both chosen years. As a result, companies which are not listed in the same index for both years are excluded (as at December 2010[7] and December 2013[8]). Next, financial companies are extracted and excluded from the list.

Since some of the companies' first mandatory year falls in 2014, some annual reports were not published when data was collected. Data collection ends at 31 October 2014; therefore, those companies with the unpublished annual reports by the end of the period of data collection were discarded. The following Table 4.2 shows how the final sample selection was arrived at.

Table 4.2: Sample Selection Procedure

	Number of Companie
Total FTSE 250	250
(-) Companies not listed for both years	(72)
(-) Financial companies	(71)
(-) Companies which latest annual reports not available by 31 October 2014	(12)
Sample companies	95
Total FTSE 100	100
(-) Companies not listed for both years	(20)
(-) Financial companies	(17)
(-) Companies which latest annual reports not available by 31 October 2014	(0)
Sample companies	63
TOTAL COMPANIES	158

[7] http://www.stockchallenge.co.uk/ftse.php?report=101208

[8] http://www.stockchallenge.co.uk/ftse.php?report=131211

Industries were categorised into 15 categories based on FTSE Industry Classification Benchmark (ICB) super sector breakdown[9]. Details of the industries and frequency of companies are as in Table 4.3 as follows:

Table 4.3: Sample based on Industry

	INDUSTRY	FREQUENCY		Total	%
		FTSE 100	FTSE 250		
1	Oil & Gas	6	6	12	7.6
2	Chemicals	1	1	2	1.3
3	Basic Resources	7	4	11	7.0
4	Construction and materials	0	2	2	1.3
5	Industrial goods and services	12	28	40	25.3
6	Automobiles and parts	1	0	1	0.6
7	Food and beverage	4	4	8	5.0
8	Personal and household goods	4	5	9	5.7
9	Health care	4	2	6	3.8
10	Retail	5	10	15	9.5
11	Media	4	6	10	6.3
12	Travel and leisure	5	12	17	10.8
13	Telecommunications	2	3	5	3.2
14	Utilities	6	2	8	5.0
15	Technology	2	10	12	7.6
	Total	**63**	**95**	**158**	**100**

4.4.2 Research Participants for Stage 2

In order to investigate the corporate storytelling in climate change and carbon disclosure, 12 sample companies were chosen. These companies are chosen using a purposive sampling, where only companies that meeting certain criteria are chosen. This sampling method is chosen because the researcher wants to 'generate a wealth of detail' from the few selected companies (Teddlie and Tashakkori, 2009 p. 173). Since the sample is chosen with a specific purpose related to the research question (in this case RQ2), the companies selected could give rich information in regard to the question (Teddlie and Tashakkori, 2009). This method however, does not enable the researcher to generalise the finding to the whole population as it is a non-probability sampling (Creswell, 2013; Bryman, 2012). The characteristics used in order to select

[9] http://www.ftse.com/analytics/factsheets

these companies include: top scorers for disclosure index from stage 1, being in the top rank in Carbon Clear 2014/15 survey, listed in CDP 2015 Climate Disclosure Leadership Index (CDLI) and Performance Leadership Index (CPLI), operating in high emission industry and high emitters (among the companies in sample from stage 1). The above criteria were used as the researcher believed, based on prior literature (see Matsumura et al, 2011; Talbot and Boiral, 2015) that those companies with high emissions will report more stories and information to compensate their negative impact and preserve their reputation. On the other hand, those companies that have been acknowledged by CDP and Carbon Clear for their reporting should also be a good benchmark and comparison to other companies, especially for those who are new to carbon reporting. Therefore, looking at the detail of their various type of carbon reporting may reveal good reporting practice.

The list of the companies and specific reasons for their choice is listed in Table 4.4 below.

Table 4.4: Selected Companies and Reason of Choice

No	Company	Reason for being chosen
1	BHP Billiton	Listed in CDP Climate Disclosure Leadership Index 2015 (CDLI) with 99% score. Highest emitters in its industry
2	BP Plc	High emitter (Stage 1)
3	BT Plc	Rank number 1 for carbon reporting in Carbon Clear 2014 and 2015 report. Listed in 2015 Climate Performance Leadership Index (CPLI) (listed in the index for more than a year).
4	Diageo Plc	Listed in CDP Climate Disclosure Leadership Index 2015 (CDLI) with 100% score. Listed in 2015 Climate Performance Leadership Index (CPLI) (listed in the index for more than a year).
5	DRAX Group	Highest emitter for FTSE250 and its industry
6	Imperial Tobacco Group Plc	FTSE100 highest disclosure index score (Stage 1)
7	Marks and Spencer Plc	Share (with BT) rank number 1 for carbon reporting in Carbon Clear 2014 report and rank 2 in 2015 report
8	Royal Dutch Shell Plc	Highest emitter for FTSE100 and high emitters industry
9	SSE Plc	Listed in CDP Climate Disclosure Leadership Index 2015 (CDLI) with 100% score. Second top emitters in its industry.

10	TUI Group Plc	Listed in CDP Climate Disclosure Leadership Index 2015 (CDLI) with 100% score.
11	UBM Plc	FTSE250 highest disclosure index score (Stage 1)
12	Unilever Plc	Rank second in Carbon Clear report. Listed in CDP Climate Disclosure Leadership Index 2015 (CDLI) with100% score. Listed in 2015 Climate Performance Leadership Index (CPLI) (listed in the index for more than a year).

UBM Plc and Imperial Tobacco Group Plc are chosen based on the analysis from stage 1. Both companies are the highest scorers for disclosure index in their respective FTSE Group. Drax Plc, BP Plc, Royal Dutch Shell Plc and BHP Billiton Plc were chosen because they are among the high emitters in the sample from stage 1. In stage 1, reported total emissions data were gathered for all sample companies. The companies' emissions data is compared amongst the sample companies as well as within industry classification. High emitter companies are chosen as they are expected to have high disclosure in this area in order to repair their reputation (Ennis, Kottwitz, Lin, and Markusson, 2012; Chithambo and Tauringana, 2014). As for the rest of the companies, they were chosen based on their good reputation in their reporting, either through a high score in CDP reporting index or Carbon Clear survey. Unilever and Diego were listed in both Climate Disclosure Leadership Index (CDLI) and Climate Performance Leadership Index (CPLI) for 2015; while TUI Group Plc and SSE Plc scores 100% and listed in CDP CDLI in 2015. At the same time, SSE Plc is also the second highest emitters in utility industry behind Drax Plc. Last but not least, the companies' selection is also based on the disclosure rank published from Carbon Clear survey. BT Plc was at the top of the rank 2014 and 2015 report. In addition to that, this company is also listed in 2015 Climate Performance Leadership Index (CPLI) and has been listed in the index for more than a year. Finally, Mark and Spencer Plc is chosen as the company that shared rank 1 with BT Plc in Carbon Clear survey in 2014 and in 2015, the company is at the second place behind BT Plc.

4.4.3 Research Participants for Stage 3

Similar to stage 2, purposive sampling is used in order to identify the research participants. In this stage, in order to understand the motivation behind carbon reporting and MCRR implementation, the targeted participants for the interviews were those who are responsible for and involved in carbon measurement and reporting in an organisation. This could be their CSR manager, Sustainability Director and others.

Specific companies are chosen to ensure that there is equal opportunity for different FTSE group companies to participate, as well as ensuring variety representation (Bryman, 2012) from various type of industries. Other targeted participants of the interview, using a different set of questions; included policy makers, professionals or those related to the implementation and enforcement of the mandatory carbon reporting. These organizations are chosen because they are the expert informant (Teddlie and Tashakkori, 2009) of the required information based on their knowledge, experience, and involvement in carbon disclosure implementation.

4.4.3.1 Negotiating Access for Interview

Gaining access to interviewees proved to be the hardest part of data collection for the researcher. This is because, interviews are voluntary and the researcher has no power to influence or force people to participate. The first difficulty is to identify the right respondents and get their contact details. Individual contact information is rather hard to get because most of the companies do not disclose it in their published documents or websites. As a result, some of the interview invitations are sent to individuals; but where this information is not available, it was directed to the organisation and department in general. The invitation was sent to the targeted participants and companies in two ways; mail and e-mail. Some of the communications are through e-mail only but for some, it involved both. In inviting company representatives to participate, the invitation letter (Appendix 2) is either sent directly to the companies' representative or to the companies in general, together with a supporting letter from the supervisor (Appendix 3) and research information leaflet (Appendix 1). The information leaflet plays a role in explaining the purpose of the study, the expectation from the interviewee, how the interview is to be conducted and aspects of data confidentiality. After making more than 100 contacts with 90 companies and organisations (including government and other agencies), only 13 companies and 4 agencies agreed to participate in the interview. Four companies rejected the invitation where else the rest of the organisations did not give any feedback.

The following tables (4.5 and 4.6) list all of the interview participants from both FTSE350 and agencies.

Table 4.5: Business participants from FTSE350

Company	Position	FTSE	Industry	Date Interview
A	Environmental engineer	FTSE 100	Basic Resources	26/02/2015
B	Manager of Environment & Supply Chain Risk	FTSE 100	Media	18/02/2015
C	Sustainability Manager	FTSE 100	Travel and Leisure	20/04/2015
D	Utilities Manager	FTSE 250	Retail	06/05/2015
E	Group Property & Environment Director	FTSE 250	Travel and Leisure	12/03/2015
F	Director, Corporate Responsibility	FTSE 100	Media	29/01/2015
G	Sustainability Manager	FTSE 100	Healthcare	25/03/2015
H	Director Group Sustainability	FTSE 100	Industrial Goods and Services	23/02/2015
I	Purchasing Manager	FTSE 250	Travel and Leisure	19/05/2015
J	Climate Change Manager	FTSE 100	Utilities	12/05/2015
K	Head of Energy and Renewables	FTSE 100	Retail	08/05/2015
L	Director of Sustainability	FTSE 250	Personal and Household Goods	02/03/2015
M	Sustainability and Reporting Manager	FTSE 100	Retail	13/02/2015

Table 4.6: Interview participants from consultant and government agency.

Agency	Date of Interview
W	18/02/2015
X	06/05/2015
Y	26/02/2015
Z	20/04/2015

As Table 4.5 has shown, the companies interviewed represent various business industries with 9 of the 13 companies coming from the FTSE100. The interviews were carried out between February and May 2015. As for the agencies, only one

government agency has positively responded to the interview invitation (Agency X). However, not much information is gathered from the interviewee as he was relatively new to the agency. The time spent for each of the interviews varies from 20 minutes to 2.5 hours per interview.

4.5 DATA ANALYSIS

Parker (2005), based on his observation on a study of social and environmental accounting literature published between 1988 and 2003, claimed that content analysis is a dominant analysis used for empirical evidence. In this research project, both data gathered from documents and interviews were analysed using content analysis. As stated earlier, the content analysis for stage 1 will be based on a disclosure index developed from the guidelines issued by DEFRA (2009) for the companies' annual report. In stage 2, the content of annual reports, stand-alone report and online reporting were analysed; while in stage 3, the content analysis is based on the interview data. As for stage 2 and 3, a thematic analysis (Braun and Clarke, 2006; Gibbs, 2007; Thomas and Harden, 2008; Saldaña, 2015) was also applied to the analysed content.

4.5.1 Content Analysis

Content analysis was defined by Krippendorff (2004 pg. 18) as "a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use". Adopting the definition from Berelson (1952), Neuendorf (2002) has defined it as a research technique for the systematic, objective and quantitative analysis of message characteristics.

The content analysis uses explicit rules of coding (Krippendorff, 1980; and Weber, 1990), which involve categorizing and coding of data (Weber, 1990). In this research project, secondary data from annual reports were categorized and coded according to the disclosure index from DEFRA guidelines 2009. The coding is based on the item disclosed and scoring is based upon finding the disclosure item. Therefore, the analysis for this stage is more in the form of descriptive content analysis. The guidelines disclosure items are divided into two: the emissions data and supporting explanation (Table 4.7). However, for the purpose of this study and to incorporate the mandatory requirements, the items are reclassified into mandatory items and voluntary items, as per Table 4.8.

Table 4.7: The disclosure index based on DEFRA Guidelines (2009)

	Emission data
1	Scope 1 emission/direct
2	Scope 2 emission/indirect
3	Scope 3 emission/other indirect
4	Total gross emission
5	Carbon offsetting
6	Green tariff
7	Intensity emission/ratio
8	Comparative emissions data from previous reporting
9	Base year emission data
	Supporting explanation
10	Reporting period
11	Organizational boundary
12	Changes in emission since previous year
13	State intensity measurement
14	State the reason for intensity measurement choice
15	State the reason for any significant changes in intensity measurement from the previous year
16	Measuring and reporting methodology
17	Stating for each activity the % of activity data estimated
18	State and specify each scope
19	State the conversion tools / emission factors used
20	State the base year chosen
21	State approach used to set the base year
22	State base year recalculation policy
23	State reason for base year emissions recalculation
24	State emission or reduction target.
25	State scopes covered in the target
26	State target completion date
27	Provide a brief overview of progress towards target
28	State the name and position of the person(s) responsible for achievement of this target
29	Detail of specific emission exclusion)
30	Percentage of emissions excluded (estimation)
31	Explanation for the reason of exclusion
32	Provide a breakdown by country of total GHG emissions
33	Provide detail of any exclusions of countries if a global total is reported
34	State external assurance received
35	Provide copy or link to assurance statement
36	State the type of carbon credit/ Carbon Offsetting
37	State the supplier and the name of the tariff
38	State the additional carbon saving associated with the tariff as a percentage (%)

(Source: DEFRA Guidelines 2009)

Table 4.8: Disclosure Index Used in the Study

	Mandatory disclosure
1	Scope 1 emission/direct
2	Scope 2 emission/indirect
3	Intensity emission/ratio
4	Measuring and reporting methodology
	Voluntary disclosure
1	Reporting period
2	Scope 3 emission/other indirect
3	Total gross emission
4	Carbon offsetting
5	Green tariff
6	Comparative emissions data from previous reporting
7	Base year emission data
8	Organizational boundary
9	Changes in emission since previous year
10	State intensity measurement
11	State the reason for intensity measurement choice
12	State the reason for any significant changes in intensity measurement from the previous year
13	Stating for each activity the % of activity data estimated
14	State and specify each scope
15	State the conversion tools / emission factors used
16	State the base year chosen
17	State approach used to set the base year
18	State base year recalculation policy
19	State reason for base year emissions recalculation
20	State emission or reduction target.
21	State scopes covered in the target
22	State target completion date
23	Provide a brief overview of progress towards target
24	State the name and position of the person(s) responsible for achievement of this target
25	Detail of specific emission exclusion)
36	Percentage of emissions excluded (estimation)
27	Explanation for the reason of exclusion
28	Provide a breakdown by country of total GHG emissions
29	Provide detail of any exclusions of countries if a global total is reported
30	State external assurance received
31	Provide copy or link to assurance statement
32	State the type of carbon credit/ Carbon Offsetting
33	State the supplier and the name of the tariff
34	State the additional carbon saving associated with the tariff as a percentage

(Source: Adapted from DEFRA Guidelines, 2009)

In searching for the disclosure items, several keywords are used. Those keywords include climate change, carbon, emission, GHG/greenhouse gas, footprint, CO2, and energy are used. These keywords will lead to the company's carbon and climate change disclosure. Therefore, these words "appear to reflect an efficient and parsimonious process of capturing a broad set of company references to the

information required" (Hollindale, 2012 p.51). The whole part of the carbon report are read and content of the disclosure then matched with the index and a score of 1 is given if the disclosure matches the index. The search for the items sometimes uses a specific keyword such as 'scope' or 'intensity'. In doing this, I have used the search key through documents' words as well as the word search through NVivo10.

In measuring the quality of the disclosure, dichotomous variable of 1=Yes and 0=No was used depending on whether carbon related data (based on disclosure index) are being disclosed in the annual report or not. No weighting is given to the index since they are treated with the equal importance (Cooke, 1989; Tauringana and Chithambo, 2014). In addition, the unweighted approach is adopted in this study since it considered to be superior, appropriate and commonly used in reporting compliance research (Abdul Salam, 2013). As a result, four points are allocated to the mandatory disclosures, while total voluntary disclosure is 34 points as per Table 4.8.

Even though the data is presented (in Chapter 5) descriptively and accompanied with some statistical analysis, it does not change the interpretivist philosophical assumptions for the study. This is because the discussion of 'change' and 'respond' to the regulation is done interpretatively, without trying to confirm or disconfirm any hypotheses (Easterby-Smith et al., 2008). In addition to that, the analysis of the data does not try to approve or test any theory to the data as typically done by positivist (Myers, 1997).

4.5.2 Thematic Analysis

Thematic analysis is a commonly-used type of analysis in qualitative research (Guest et. al, 2012). It focusses on identifying, categorizing and recording important "themes" or meaningful patterns of a phenomenon studied to address a specific research question throughout a dataset. This study adopted an interpretative approach in coding the themes, where the development of the themes is dictated, as far as possible, by the content of the data. The researcher begins the thematic analysis process by (i) familiarizing with research data (narrative from interviews transcriptions and textual data); (ii) coding the data through creating initial codes; (iii) searching for themes among codes; (iv) reviewing and revising themes; (v) defining, developing, naming and categorizing themes; and (vi) writing up and connecting to the theoretical framework (Braun and Clarke, 2006; Gibbs, 2007; Thomas and Harden, 2008; Saldaña, 2015). Table 4.9 shows a sample of coding and themes process to make sense of research

data and to generate empirical conclusions and possible directions for research from analysis of data.

Table 4.9: Sample of coding and theme process.

Narrative vignette	Code	Theme
"In 2014/15, SSE achieved a 34% reduction in its total carbon emission (Scope1, 2 and 3)."(SSE, Annual Report, 2015)	Reduction in emission/reduction target achievement	Stories achievement
"TUIfly was named 'most climate-efficient airline in the world with 1 million passengers' for the second year in a row in the 2014 Atmosfair Airline Index, and Thomson Airways won 'best aviation programme for carbon reduction' at the 2014 World Responsible Tourism Awards." (TUI Group, Sustainability Report, 2015)	Awards and recognition	
"We deepen our understanding of future energy, technology and climate change trends through in-house research and in partnership with leading academics. We have been supporting Princeton University's Carbon Mitigation Initiative since its inception in 2000. It brings together scientists, engineers and policy experts to design carbon mitigation strategies that are safe and effective as well as affordable."[10]	Collaboration	

Source: Researcher Analysis

Based on the data, codes are created based on the recurrent or dominant issues found in the data collected. For example, as shown in Table 4.9, the emission reduction achieved by companies; award and recognition received and collaboration with prominent third parties are the common and recurrent data found in companies' disclosure to reflect their positive achievement. The combination of these codes thus forms a story theme of 'story of achievement' for companies' carbon and climate change disclosure. The following Table 4.10 provides a summary of codes and themes from an analysis of the companies' disclosures (annual report, stand-alone report, websites and other online reporting), and how the theme and its objectives lead to the selection of an appropriate theory. In the case of this research, the theory chosen was

[10] http://www.bp.com/en/global/corporate/sustainability/the-energy-challenge-and-climate-change/working-towards-a-lower-carbon-future.html

storytelling (Boyce, 1996; Boje, 2006, 2011; Boje, Gardner and Smith, 2006; Gill, 2011).

Table 4.10: The summary of coding themes from companies' disclosure

Code	Themes	Theory
Emissions data	Story behind emission number	Storytelling
Explanation of the data		
Definition of climate change	Climate change story	
The cause of climate change		
The impact of climate change		
Awareness and acknowledgement of business' impact on climate change	Story of effort and commitment	
Express commitment towards mitigating the impact		
Emission reduction initiatives		
Emission reduced/ reduction achieved	Story of achievement	
Award and recognition		
Collaboration		

Source: Researcher

Based on the process of coding and categorising data into common categories, four prominent themes were identified from the data. These four themes are discussed in Chapter 6 of the thesis.

As mentioned earlier, after analysis of the climate change and carbon disclosure from stage 2 was done, interviews with companies' and agencies' representatives were carried out. The analysis of the interview data reveals the information on the dynamic of implementation of climate change and carbon disclosure, which was categorised in themes as shown in the following Table 4.11.The detailed discussion on the themes is provided in Chapter 7.

Table 4.11: Themes related to the dynamic of implementation of climate change and carbon disclosure

Code	Themes	Theory
Stakeholders' expectation	Story of motivation for reporting and managing carbon emission	Storytelling -form a firm's story behind the story of carbon disclosure
Regulation		
Management's awareness/morality		
Image and reputation		
Efficiency and cost reduction		
Data collection	Issues and challenges	
Staff's understanding and competency		
Cost		
Workload		
Management support		
In-house expertise	Implementing carbon reporting and management	
Consultation		
Outsource		

4.5.2.1 Identification of Corporate Storytelling.

In Chapter 3, corporate storytelling is defined as "the process of developing and delivering an organisation's message by using narration about organisation (Gill, 2011, 2014) which includes morality, behaviours, processes, relationships, action and strategy (Marzec, 2007; Berry, 2001;Dowling, 2006; Gill, 2014); which take place retrospectively, current and prospectively (Boje, 1991; Dowling, 2006; Marzec, 2007; Gill, 2014) to influence stakeholders' perception towards organization by creating a new point-of-view or reinforces an opinion or behaviour (Gill, 2011,2014)."

Based on this definition, a few characteristics can be extracted and may be used in identifying corporate storytelling. The main characteristic is the message that the company intends to deliver to their audience. The message delivered may be related to morality, behaviour, processes, relationships, action and/or strategy. Therefore, the first stage in identifying the storytelling is by seeking to interpret the message behind the disclosure. By looking at the disclosure theme, the interpretation of the message and goals may be assessed as follows:

Table 4.12: Corporate message and goals

Themes	Message	Goals
Story behind emission number	-compliance -following guidelines	Making sense of reporting data
Climate change story	- show morality - socially responsible	Create awareness on climate change
Story of effort and commitment	- being responsible -committed -we are capable	Build trust and good impression
Achievement	-we are good -we are doing the right thing	Influencing Stakeholders' Impression and inspiring actions to maintain/improve image and reputation

Source: Researcher analysis

Besides the message and its domain, the story usually also involves time elements. The domain of the message such as the activity or process may have occurred at present, retrospectively or prospectively. Last but not least, all these messages may have underlying goals, but the ultimate goal is about influencing the audiences' impression of the organization, so that a good image and reputation of the organization can be improved or maintained. For example, the reporting of strategies and emission reduction activities carries messages of morality, responsibility and capability of the companies in handling the impact of their activities on climate change. Strategies and activities around emission reduction, that are applied by companies to reduce their emission are likely to have been implemented over the last few years and are planned to be carry on into the future. Thus stories written in this way fulfil all the time dimensions of current, retrospective and prospective. This kind of story may have a positive impact on the audience's perception towards the organization.

4.6 SUSTAINING CREDIBILITY AND TRUSTWORTHINESS

In contrast to quantitative research, qualitative researchers use the terminology of trustworthiness to construct correspondence to the research phenomena and respond to issues of validity and reliability. According to Bryman (2012) and Lincoln and Guba (1985), trustworthiness is comprised of the following four criteria: (i) **credibility** (internal validity); (ii) **transferability** (external validity/generalizability); (iii); **dependability** (reliability); and (iv) **conformability** (objectivity). They propose that these four criteria should be taken into account by qualitative researchers in search of a trustworthy.

Credibility involves establishing confidence in the 'truth' or ‘believability’ of the research findings by questioning how congruent the findings are with reality. It deals with the ‘quality not quantity’ of the data. This means the credibility of research data is more reliant upon the richness of the information collected, instead of the quantity of data gathered (Lincoln and Guba, 1985). There are many techniques and strategies that can be used by researchers to establish and maintain credibility, including: respondent validation, prolonged engagement and persistent observations, peer debriefing, familiarizing with the participants organizations’ culture, exercising “reflective commentary”, referential adequacy and applying triangulation through using various approaches, sources of data, different types of informants and sites (Shenton, 2004; Lincoln and Guba, 1985). Although in reality, the participants/readers are the only ones who can reasonably appraise the credibility of the findings or data, in order to maintain the credibility of findings in this study, the researcher carried out data triangulation from various source of data (interviews and documents) and clarified any ambiguities with interviewees.

Transferability implies the generalization or applicability of the research findings to other situations, times, settings, people or contexts. Even though generalization in qualitative research is limited, one way of achieving a type of external validity in qualitative research is through thick description (Lincoln and Guba, 1985). The richness and sufficiency of thick description demonstrate that the research data and findings can provide readers or other researchers with references for making judgements about the possible transferability of the findings to different environments or other contexts (Bryman, 2012).

A data audit can be conducted if the data set is both rich and thick so that an auditor can determine if the research situation applies to their own circumstances. Without sufficient details and contextual information, this is not possible. Regardless, it is important to remember that the aim is not to generalize beyond the sample.

Dependability suggests that the research findings could be repeated to ensure the reliability and consistency of the research inquiry processes used. Data dependability is assessed through the use of a data audit, where the researcher must have a complete record of the entire research process and activities, including the research plan, process of selecting participants, construction and design of research questions, conceptualization of the study, data collection, and analysis and interpretation of research findings. By auditing the records of the researcher’s activities, the

participants/readers can see how well the research procedures, scientific processes, and techniques for meeting the credibility and transferability have been followed. By referring to sections 4.3, 4.4 and 4.5 of this chapter and the research questions defined in Chapter 1, this research justifies the theoretical implications and addresses the dependability criteria as outlined by Lincoln and Guba (1985) and Bryman (2012).

Last but not least is the conformability criterion. Conformability refers to the researchers' difficulty of ensuring and achieving absolute objectivity. It is the extent to which the research findings are driven and influenced by the participants and not researchers' own bias or interest (Lincoln and Guba, 1985). Some of the techniques that can be used by researchers for establishing confirmability includes conformability audit, audit trail, triangulation, and reflexivity. In this study, the researcher has sought to establish conformability through exercising triangulation, continuous discussion with supervisors, research colleagues, expert judgement, peer review and presenting the research findings at conferences.

Ultimately, the four criteria for trustworthy research, credibility, transferability, dependability and conformability, are crucial and must be taken into account by qualitative researchers in pursuing and searching for a trustworthy qualitative research study.

4.7 RULES ON ETHICS AND CONFIDENTIALITY

Ethical issue needs to be considered before data are collected. Hence, the ethics approval from the Aston University Ethical Committee was obtained before any data collection is carried out. As for the data that were collected through published documents (such as annual report and sustainability report) and publicly available online data, no ethical issues are expected. However, considerations were given on how the data are analysed and presented to ensure that it causes no harm to the organizations.

The researcher has ensured that the interviewees understood what was expected from them. In arranging an interview, a formal request letter was sent to the selected participants, together with the information leaflet. The information leaflet provided a brief explanation of research aims, what is expected from participants, the approximate length of the interview, the confidentiality assurance of both the participant and data given, how the research output will be used, as well as the researchers' contact. The

draft of the information leaflet is in Appendix 3. Again, before the start of each interview, the participant was verbally informed of the aims and importance of the research and how their contribution is vital to its success. Further, assurance was provided as to the interviewee's confidentiality and their rights. According to ESRC (2010), there should be no coercion of research subjects to participate in the research and consent has to be freely given in order for the research to be valid. Participants were made aware that they could withdraw their consent at any time during the interview and even after (during a specific period of time) for whatever reasons.

In an interview, the issues of confidentiality and anonymity involve legal as well as ethical considerations (Bryman and Bell, 2007), therefore these needs were agreed by both interviewer and interviewee. As the researcher intended to record the interviews, permission was asked from the interviewees before it could be done. According to MRS Code of Conduct (2010), participants need to be informed that the interview will be recorded and they can hear the recording afterward if they want to. Participants were given the opportunity to ask any questions related to the research or the research procedures and clear any doubts that they may have. When everything had been agreed, two copies of the consent form (draft of form in Appendix 4) were signed by both the interviewer and interviewee. Any unpublished documents obtained from the interviews are kept confidential, used for the research purposes only and will be stored securely.

There was no potential harm to participants in either a physical or psychological sense, as the interviews were either conducted by telephone or in the participants' office. In addition, the questions asked were strictly professional and approved by the Aston University Ethics Committee. The questions were also sent to participants in advance upon their request.

The data collected was stored in password-protected files that only the researcher could access. In reporting the study findings, the participant companies were made anonymous and had different names assigned to them (company A to M). As for government agencies and consultants, they are anonymously labelled as agency W, X, Y and Z. In the event that consent was withdrawn (this was not the case in this study), their data would have been destroyed or deleted to ensure it was not used.

4.8 CONCLUSION

This chapter has presented the research method and procedures involved in collecting and analysing data that will be discussed in Chapters 5, 6 and 7. Different data sources were used in order to fulfil different research objectives. For instance, annual reports were used to differentiate between voluntary and mandatory carbon disclosure. The annual reports were further used, together with other stand-alone reports and analysis of online reporting, to investigate the storytelling genres used to distinguish climate change and carbon reporting approaches across the companies studied. Data from interviews enabled the researcher to examine the dynamic nature of the implementation of carbon disclosure among the FTSE350 companies, including the motivation, issues and the implementation approach to carbon disclosure. The data analysis section has particularly explained how data was analysed using content and thematic analysis and described how stories were identified in the data. The chapter also shows how the researcher sought to assure participants on the ethics and confidentiality of the research, to maintain the credibility and trustworthiness of the data. The next chapter presents an empirical analysis of the differences observed between voluntary and mandatory disclosures using a disclosure index based on the DEFRA's 2009 guidelines. The next chapter will investigate the difference of climate change and carbon disclosure between voluntary and mandatory year based on disclosure index recommended by DEFRA.

CHAPTER 5: CARBON REPORTING-VOLUNTARY VERSUS MANDATORY

5.1 INTRODUCTION

This chapter explores companies' carbon disclosure in the annual reports for two years (2010/11 and 2013/14). This provides evidence of the reporting under voluntary carbon disclosure and for the later period under mandatory disclosure, thus answering research question 1 (RQ1), which is to investigate the changes made by the organization to their carbon disclosure in response to the introduction of MCRR. The comparative analysis shows differences between the two years; as well as between the FTSE 100 and FTSE 250 indices. In addition to that, comparison of disclosure is also carried out across industries. As stated in Chapter 3, 2010/11 is chosen to reflect the introduction of the Carbon Reporting Guidelines by DEFRA in September 2009; while 2013/14 is the first year of MCRR implementation. Based on the criteria explained in Chapter 3, a total of 158 companies were selected for the sample, comprising of 63 companies from FTSE100 and 95 companies from FTSE250.

The chapter proceeds as follows. The first part of the chapter analyses the companies' compliance with MCRR; and how the introduction of MCRR has changed the disclosure of the mandatory items as compared to the voluntary year. In addition to that, a comparative analysis is also done by FTSE group and industry. Following this there is an exploration of the changes and differences in the voluntary content of carbon disclosure between the two selected periods; as well as the selected groups and industry. Last but not least, a brief discussion on the differences of the disclosure presentation in both years is also presented. The chapter concludes by presenting a summary of the findings.

The analysis of the data is merely descriptive and does not apply theoretical lens as used in other empirical chapters. This is because the chapter is intended to set as the background on the knowledge of the companies' disclosure level. Another reason for that is because the centre of the storytelling theory situated at the message that the companies want to deliver to the audience within particular report at a particular time. In the case of annual report, 'message' of 'change' in response to the regulation (MCRR) as shown in the finding of this chapter is implicitly shown if a comparative

analysis is done over a different period of time. In addition to that, the messages carried through the content of reporting are analysed and reported in Chapter 6.

As mentioned in chapter 4, the data collection for this stage (stage1) is based on disclosure index developed using DEFRA guidelines 2009. As a result, any carbon related disclosure reported by the organization but does not form part of the issued guideline is considered inapplicable and not counted. The disclosure index used may vary with other researchers as different researchers used a different source for their disclosure index. For instance, Borghei-Ghomi and Leung (2013), establish disclosure index based on CDP questionnaires; while Rankin et al (2011) use ISO 14064-1 as a basis for their index.

This chapter is important for the following chapters in two ways. First, it provides a basis for selecting companies whose disclosures are further examined to determine how carbon reporting beyond the annual report has developed (Chapter 6); and also to determine the companies to be invited for the interviews – the analysis of which is presented in Chapter 7. Secondly, the findings from this chapter inspire the author in establishing interview questions and enriched the existing data; especially by incorporating the 'how' and 'why' type of questions.

5.2 COMPLIANCE WITH MCRR

With the existence of regulation such as MCRR, stakeholders would expect business to comply, as non-compliance will contribute to reputational risk. According to CIMA (2007 pg. 17), "a risk to reputation occurs where the organisation fails to meet the expectations of a specific stakeholder group". Non-compliance with regulation forms a legal risk (CIMA, 2007) and ignorance of this risk could lead to reputational damage (CIMA, 2007; PWC, 2016[11]). Following the introduction of the MCRR in September 2013, it was found that companies had made changes to their carbon reporting in order to fulfil the new statutory requirements. This section will discuss the compliance disclosure performance of the selected company based on the requirements under MCRR.

[11] http://www.pwc.co.uk/governance-risk-compliance/insights/governance-risk-and-compliance. html

In convincing their readers and stakeholders that they are complying with the new regulation, most of the sample companies include a compliance statement in their disclosure. For example, together with their emissions data, Experian Plc (2014) reported that:

> *"We have reported on all the emission sources in line with the Companies Act 2006 (Strategic Report and Directors' Reports) Regulations 2013." (Experian, 2014)*

MCRR requires organizations to disclose the following carbon emission information in their Directors' Report: (1) the carbon emissions from Scope 1(direct emissions); (2) scope 2 (indirect emissions); (3) the methodology used to calculate the carbon emissions; (4) the intensity ratio used to express a company's annual emissions; (5) repeat the relevant information disclosed in its first reporting year in every subsequent directors' report, including the relevant information in the first reporting year if it has been recalculated and last but not least, (6) state if the period of reported emissions is different to the period of which the Directors' report is prepared. Since 2013/14 is the first year of reporting, then requirement (5) is not required. Companies can only start to include the first year data in their report starting in the next reporting period. As for requirement (6), it is assumed that companies that did not state that the period of the disclosure is not the same as the period of Directors' report is prepared; their reporting period is the same. Therefore, in calculating the level of compliance, the author only includes the following elements in the calculation. Thus, the total compliance score is four (1 point for each item)

(1) Scope 1 emission (direct emission)
(2) Scope 2 emissions (indirect emission),
(3) Intensity ratio and intensity emission
(4) Measuring and reporting methodology

5.2.1 Comparison of compliance disclosure between voluntary and mandatory year

The first part of this section present overall comparative carbon disclosure between voluntary year and mandatory year. Next, the analysis on the compliance items is discussed.

Overall, nearly all (150 of 158 companies) of the selected FTSE350 companies provide some climate change disclosure and carbon information in 2010/11 (the voluntary year). The introduction of MCRR has encouraged the small number of non-disclosing companies to provide some carbon related information and the existing companies to further improve the contents of their disclosure in order to comply with regulation. Comparing the number of reporting companies for both years; the number of reporting company has increased from 95% to 100% in the mandatory year. The results are depicted in the following Figure 5.1.

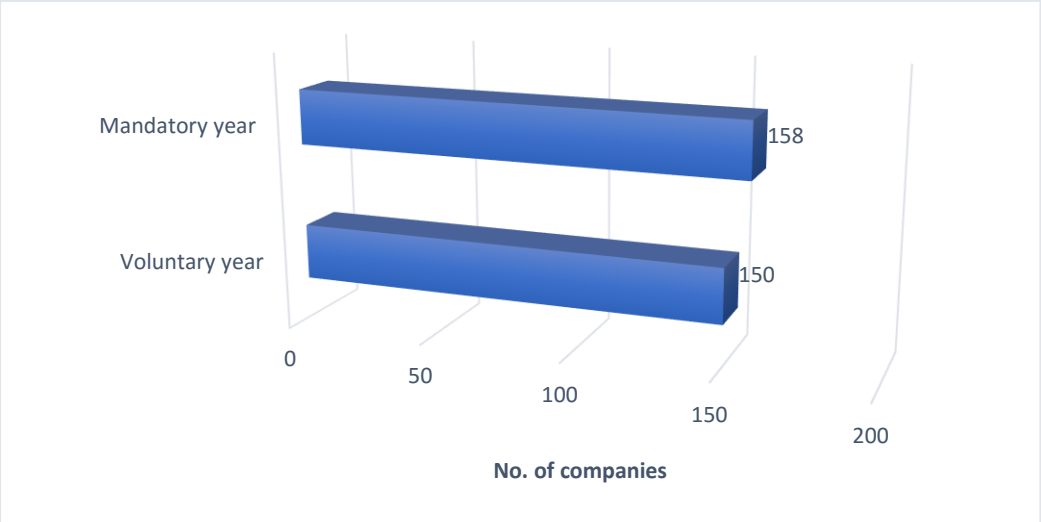


Figure 5.1: The comparison of the number of reporting companies for both years.

Even though the number of companies making voluntary disclosures is high, this does not mean that all companies fulfilled all of DEFRA's guidelines and recommendations. The analysis of changes for the compliance items shows a large increase in all of the mandatory items in the mandatory year as compared to the voluntary year. Figure 5.2 below show the comparison of the score (out of 4) for the compliance items for both selected years.

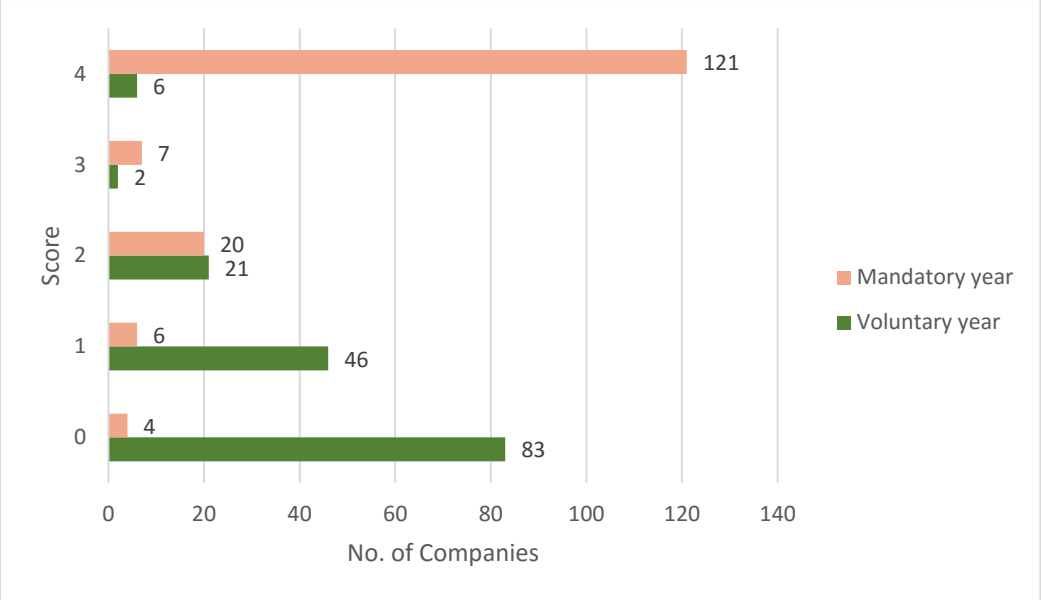


Figure 5.2: Comparative score for compliance items by year

The above graph demonstrates a drastic change in terms of the score for the four compliance items in the mandatory year as compared to the voluntary year. For example, in the voluntary year, the majority of the companies (83 companies) do not disclose any of the mandatory items (score 0 points). However, this figure has dropped massively in the mandatory year, leaving only the total of 4 companies with total non-compliance. With the massive decrease for the zero scorers, the companies that have full compliance with the total score of 4 have soared to 121 companies, an increase of 115 companies from the voluntary year. Further, the number of companies with only 1 score has decreased from 46 to only 6 companies; while companies that score 3 points has increased slightly from 2 companies to 7 companies. Meanwhile, the number of companies that 50% complied is almost the same for both years, with 21 and 20 companies respectively for voluntary and mandatory year. This finding suggests that MCRR does motivate companies to improve their reporting and fulfil the compliance requirements.

In addition to the scores, an analysis was also done on the item by item performance. The result of the analysis is presented in the following Table 5.1.

Table 5.1: Change of disclosure by mandatory items

		Total		Total Change
	Mandatory Disclosure	Voluntary Year	Mandatory Year	
1	Scope 1 emission/direct	14	126	112
2	Scope 2 emission/indirect	14	127	113
3	Intensity emission/ratio	56	146	90
4	Measuring and reporting methodology	34	149	115

The above finding shows that the disclosure for all of the mandatory items has increased in the mandatory year. The detail result for each individual item is discussed as follows.

5.2.1.1 Scope 1 and 2 Emission

Under MCRR, listed companies have to report emissions from all 6 gases listed under Kyoto protocol where ever applicable. Those gasses are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF6) (UNFCCC[12], 2008 p. 106). In reporting these gases however, the total is presented based on the sources; direct or indirect; or by scopes[13].

MCRR only requires the disclosure of scope 1 and 2 emissions; but some companies go further and include scope 3 (see further discussion in section 5.3.1.1) too. The finding from Table 5.1 above shows the huge increase in both scopes in mandatory year as compared to voluntary year; where the disclosing companies have increased from 14 to 147. On the other hand, despite having a huge increment, these two items scored the lowest total of disclosure as compared to the rest of the mandatory items.

[12] United Nation Framework Convention on Climate Change. Available at http://unfccc.int/resource/docs/publications/08_unfccc_kp_ref_manual.pdf

[13] **Scope 1 (Direct emissions):** Activities owned or controlled by your organisation that release emissions straight into the atmosphere. They are direct emissions. Examples of scope 1 emissions include emissions from combustion in owned or controlled boilers, furnaces, vehicles; emissions from chemical production in owned or controlled process equipment. (DEFRA, 2009)

Scope 2 (Energy indirect): Emissions being released into the atmosphere associated with your consumption of purchased electricity, heat, steam and cooling. These are indirect emissions that are a consequence of your organisation's activities but which occur at sources you do not own or control.

Most of the time companies will disclose both scopes of emissions together. However, in a rare case like Fidessa Plc, the company only report emissions for Scope 2; as they view their Scope 1 to be immaterial. This has caused the difference in the total scope disclosure between scope 1 and 2. Their report stated that:

> *"Fidessa calculated the emissions from data available for its major operations and extrapolated these results to take account of the smaller operations. Scope 1 data has not been included as it is not considered to be material." (Fidessa Plc, 2013).*

Since companies only need to disclose material emissions; then a company may wish to consider whether particular emissions are material to the total of company emissions. According to DEFRA (2013), since the materiality is dependent on the circumstances of an individual company and may be influenced by issues such as the size and nature of an operation, individual companies need to make their own judgement of whether an emission is material or not in order to be included in the disclosure.

On the other hand, some companies like Tullow Oil Plc were following the MCRR and reported both of the scopes in their report; regardless of whether it is material or not. Tullow Oil Plc reported the following:

> *"Our scope 2 emissions, made up of electricity used by our key offices, are relatively immaterial to our overall emissions profile and therefore we only began reporting this for the first time, in line with new legislation." (Tullow Oil, 2013)*

As for some other companies, MCRR has led to some changes related to scope emissions. For Compass Plc for example, the company reported that they have calculated their scope 1 and 2 emissions since 2008; but for 2013/14, the company has enhanced the scope of their environmental performance reporting to meet the new mandatory reporting requirements of the Companies Act 2006 (Compass, 2013). Despite of this claim, no further explanations are disclosed on how the advancement has been made. It was reported that since 2010, their scope of emission disclosure has widened to include another 10 of the major countries of operation. This takes the total of countries included in the company's reporting to 20. Further investigation shows that this 'enhancement' in the scope of the disclosure statements is repeated from year to year. This continued until the most recent report (2015), without

demonstrating any further enhancements being made, in addition to the countries added change.

Likewise, Intertek (2013) has also reported that they extended their Scope 1 and Scope 2 GHG emissions in the first mandatory year. In the prior year, Intertek reported that their scope 1 emissions resulted from their testing and inspection services for clients and emission from their own business operations that occur at sources owned or controlled by them. In 2013, Intertek's reported scope is explained in more detail in the following statement:

> *"Scope 1 emissions now report beyond gas consumption to include fuel testing, fuel consumption, and the operation of vehicles (known as 'the combustion of fuels'). Scope 1 emissions also cover the operation of facilities which includes fugitive emissions, use of fire extinguishers, release of refrigerants and coolants and nitrous oxide." (Intertek, 2012)*

Changes also reported for their Scope 2 emissions boundary. In 2013 annual report, they reported that:

> *"Scope 2 emissions boundary now includes heat and steam generation and steam import as well as electricity consumption." (Intertek, 2013)*

As compared to previous year reporting, their scope 2 emissions were defined as those "emissions that occur from the generation of purchased electricity, heat or steam consumed at sources owned or controlled by Intertek as a result of our business operations or our testing and inspection services for clients". The current year definition appears to show a broader coverage as it has extended reporting to include heat and steam generation both internally and from external sources.

5.2.1.2 Intensity Emissions/ratio

"Intensity ratios compare emissions data with an appropriate business metric or financial indicator" to allow comparison of "performance over time and with other similar types of organisations" (DEFRA, 2013, pg. 22). As compared to emissions by scope, the above result shows that the intensity emission is a more popular choice for both years as compared to the emission by scope. Therefore, even though the item found to have changed the least with the increase of 90 disclosures; the item scores second place in term of compliance; 3 points lower than methodology. This is because,

voluntarily, more than 35% (56 companies) of the total companies have already disclosed their intensity emissions.

DEFRA (2013) highlights that companies can choose the activity type or financial type ratios for this purpose; whichever best suits their company. However, the guidelines recommend that an activity ratio is suitable when aggregating or comparing across organisations that have similar products. Meanwhile, a financial ratio is suitable when aggregating or comparing across organisations that produce different products. Consequently, there are some companies that report both types of ratios in order to facilitate both types of comparison. For the selected companies, a further analysis found that three popular intensity ratios used were revenue or turnover (74 companies), production units (30 companies) and per employee (20 companies) (list by most popular first). Beside these 3 ratios, companies are using other ratios such as Kilowatts and square feet of floor space.

5.2.1.3 Calculation and Reporting Methodology

MCRR requires companies to disclose the calculation and reporting methodology in producing the reported emission figure. The result from the table indicates that this disclosure has experienced a big leap in the first mandatory year as compared to the 2010/11 voluntary years. The disclosure of methodology has recorded the highest change with the increment of 115 more companies disclosing the items in the mandatory year; at the same time making it the highest mandatory item being complied with by the sample companies (149 companies out of the total of 158).

Even though MCRR do not specify what methodology companies must follow, a company should choose one that is robust and accepted. DEFRA (2013) guidelines suggest that companies use a widely recognized independent standard such as ISO14064, The WRI / WBCSD Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition), The UK Government's Environmental Reporting Guidance (2013 version) and The Global Reporting Initiative Sustainability Reporting Guidelines (GRI).

Further analysis on the company use of methodology found that more than 53% of the sample companies are using The WRI / WBCSD Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) as their methodology. This is followed by the UK Government's Environmental Reporting

Guidance (2013 version) which were applied by 18% of the sample companies. The rest of the companies use other methodology including ISO14064, The Global Reporting Initiative Sustainability Reporting Guidelines (GRI), EU Trading Scheme, Petroleum Industry Guidelines, and other industry guidelines.

5.2.1.4 Place of Reporting

Voluntarily, companies freely place their carbon information anywhere in the annual report, even though most would report it under sustainability or social responsibility section. In addition to that, some would prefer to disclose financial and non-financial data in separate reports. As a result, some would include this kind of information in a stand-alone report like Sustainability Report or CSR report. MCRR requires quoted companies to disclose emissions data under the Director's Report within companies' annual report. Practically, since the Director's Report falls within the companies' Strategic Report and the Director's Report is of strategic importance to the company; contents of the Director's report can also be reported under Strategic report:

> *"The strategic report may also contain such of the matters otherwise required by regulations made under section 416(4) to be disclosed in the directors' report as the directors consider are of strategic importance to the company." (Companies Act 2006)*

Consequently, many of the companies reported their emissions data directly in the Strategic Report within the Sustainability section. In addition, many have provided a brief disclosure in Director's Report section and provide a link for further explanation in the companies' Strategic Report. On the other hand, there is still a few which disclose the data in the Director's Report as required.

5.2.2 Comparative emissions by FTSE Groups

For further detail, the change in disclosure data is also analysed and compared by groups of FTSE. To clearly illustrate this change, the result is presented in the following Table 5.2.

Table 5.2: Comparative disclosure of Mandatory Items by year and FTSE Group

	Percentage of Company Reporting							
	Scope 1		Scope 2		Intensity emission		Methodology	
	FTSE 100	FTSE 250	FTSE 100	FTSE 250	FTSE 100	FTSE 250	FTSE 100	FTSE 250
Voluntary year	9.5	8.4	9.5	8.4	41.3	31.6	25.4	18.9
Mandatory year	90.5	73.7	90.5	74.7	95.2	91.6	93.7	94.7
Difference	81.0	65.3	81.0	66.3	54.0	60.0	68.3	75.8

The above table demonstrates the changes that occur in mandatory year in comparison to voluntary year for each of the mandatory items for FTSE100 and FTSE250 companies. The table shows that FTSE100 have recorded a higher increment in scope 1 and scope 2 items, while FTSE250 have a better increment in intensity emission and methodology item. As for the intensity emission, even though the percentage of increase is more for FTSE250, however, the total of reporting in FTSE100 is higher than FTSE250 for both years. In mandatory year for example, 95.2% of FTSE100 companies have disclosed this item, as compared to 91.6% for FTSE250. On the other hand, the difference is rather tiny. Similarly, the difference in term of total disclosure of methodology item between FTSE100 and FTSE250 is also very small (1%). On the hand, for scopes disclosure, the mandatory year total disclosure for FTSE100 is much higher as compared to FTSE250, even though there was a little difference in term of total scopes disclosure in voluntary year.

The significant difference between the compliance disclosures between FTSE groups in the mandatory year is proven through statistical test too. The result of the Kruskal Wallis test shows the following:

Table 5.3: Kruskal Wallis Test of the Difference between FTSE Group.

	Total Compliance in voluntary year	Total Compliance in mandatory year
Chi-Square	2.895	7.585
df	1	1
Asymp. Sig.	.089	.006

The analysis of Kruskal Wallis test has found that there is a significant difference in the compliance level of both groups for the mandatory year (*p=0.006*). On the other

hand, the result also demonstrates that the difference of the disclosure for the mandatory items is not significant for the voluntary year (*p=0.089*).

5.2.3 Comparative compliance by Industry

In addition to the analysis of differences among FTSE companies, an analysis was also done to see the compliance level differences across industry groups. Certain industries are much more power intensive and so naturally create greater amounts of carbon emissions than others (Rankin, 2011) and are increasingly subject to public concern and regulation in relation to climate change. From the review of literature, industries that give a high impact to the environment and are labelled as environmentally sensitive industries includes chemical, mining, gas and petroleum, transportation, manufacturing, construction and food industries (Buniamin, 2010; Halme and Huse, 1996) Companies like Aggreko Plc, BP Plc and BHP Billiton Plc, which are in environmentally sensitive industries, include a lot of discussions on the development of the climate change and carbon related regulations in the countries where they are operating and how these regulations could affect their current and future operations in their reporting. Companies operating in industries that provide gas and energy like National Grid and SSE reported that they are affected by requirements to reduce their own carbon emissions as well as the reduction in energy use by their customers.

Previous studies have found a positive relationship between the sensitivity of the industry to the environment with environmental disclosure (see Buniamin, 2010; Prado-Lorenzo et al, 2009; Rankin et al, 2011; Choi et al, 2013). In other words, organisations from environmentally sensitive industries tend to disclose more environmental information compared to others (Deegan and Gordon, 1996; Amran et al, 2012). According to Kolk et al (2008) and Rankin et al (2011), control of carbon emissions more directly affect the extractive and energy industries, or those industries that rely on fossil fuels as they face greater business risks and significant competitive risks. The test statistic using Kruskal Wallis has proven that there is a significant difference between industries for compliance scores in both years, as follows:

Table 5.4: Kruskal Wallis Test of the Difference between Industries.

	Compliance score in voluntary year	Compliance score in mandatory year
Chi-Square	26.622	24.325
df	14	14
Asymp. Sig.	.022	.042

Kruskal Wallis test has recorded a significant difference between industries compliance score with $p<0.05$ for both years (0.022 and 0.042 for voluntary and mandatory year respectively). In addition to that, further analysis of the compliance score is also carried out. Table 5.5 below present the compliance score for industry classification for both years as follows:

Table 5.5: Compliance score by industry for voluntary and mandatory year

Industry	Score for compliance item										**Total Company**
	0		1		2		3		4		
	V	M	V	M	V	M	V	M	V	M	
Oil & Gas	9	0	2	0	1	3	0	0	0	9	**12**
Chemicals	1	0	1	0	0	0	0	0	0	2	**2**
Basic Resources	7	3	1	1	2	1	1	1	0	5	**11**
Construction and materials	0	0	1	0	0	0	0	0	1	2	**2**
Industrial goods and service	12	0	15	1	8	6	1	2	4	31	**40**
Automobiles and parts	0	0	1	0	0	0	0	0	0	1	**1**
Food and beverage	3	0	2	0	2	1	0	0	1	7	**8**
Personal and household goods	5	0	3	0	1	1	0	0	0	8	**9**
Health care	4	0	1	0	1	0	0	0	0	6	**6**
Retail	6	0	7	0	2	2	0	1	0	12	**15**
Media	6	0	4	0	0	0	0	2	0	8	**10**
Travel and leisure	14	1	3	1	0	1	0	0	0	14	**17**
Telecommunications	3	0	1	1	1	2	0	0	0	2	**5**
Utilities	5	0	1	0	2	0	0	0	0	8	**8**
Technology	8	0	3	2	1	3	0	1	0	6	**12**
Total	83	**4**	46	**6**	21	**20**	2	**7**	6	**121**	**158**

The above table shows the number of company for each total compliance score in each industry, for both voluntary (V) and mandatory (M) years. For example, in oil and gas industry, nine company score zero point, two companies score one point, one company score two points, and none of the company score three points and four points

in voluntary year. The 'total company' column shows the total company in each industry.

Based on the above table, industry reporting shows a similar pattern of disclosure, within the voluntary year, the majority of the scores are at 0 and 1. On the other hand, the pattern changes markedly in the mandatory year where the majority of the companies across all industry groups score highly for mandatory disclosure. Despite the significant differences between industry disclosure, this pattern is similar in all industries, regardless of whether the industry is environmentally sensitive or not.

Overall, despite the improvements in the total compliance score for all industries in the mandatory year, the finding shows that there are still four cases of complete non-compliance in the sample companies. This non-compliance case came from two industries; which are travel and leisure, and basic resources. Basic resources recorded the highest number of total non-compliance (75%) of the total sample. These non-compliance companies represent 27% of the total companies in the basic resource industry. For better comparison between industry, a weighted average score graph is presented as follows:

Table 5.6: Weighted average score by industry

Industry	Weighted Average Score	
	Voluntary year	Mandatory year
Chemicals	0.50	4
Construction and materials	2.50	4
Automobiles and parts	1	4
Health care	0.50	4
Utilities	0.63	4
Media	0.40	3.80
Personal and household goods	0.56	3.78
Food and beverage	1.25	3.75
Retail	0.73	3.67
Industrial goods and services	1.25	3.58
Travel and leisure	0.18	3.47
Oil & Gas	0.33	3.17
Technology	0.42	2.92
Telecommunications	0.60	2.60
Basic Resources	0.73	2.36
Total	0.75	3.49

The Table 5.6 above shows that companies from chemicals, construction and materials, automobiles and parts, health care and utilities have fully complied with MCRR. In contrast, basic resources, telecommunications and technology are rather low on compliance. For oil and gas industry, even though the industry is classified as a highly sensitive industry, they score only 3.17, ranking below travel and leisure. Therefore the findings suggest that the level of compliance may not be influenced by the sensitivity of the industry to the environment, especially in the mandatory year. However, their compliance level has improved markedly in the mandatory year as compared to the voluntary year. It is possible that the result may change if the total sample were similar between industry and the sample size for each industry is bigger.

5.3 CHANGE IN THE DISCLOSURE OF VOLUNTARY ITEMS

In comparison to the above Section 5.2, this section explores the disclosure of voluntary items in the carbon reporting. The discussion will be divided into the analysis of the items that have major changes between both years, FTSE groups and industry; as well as the performance of their reporting score of the voluntary index.

5.3.1 Comparative Analysis of the Disclosure of Voluntary Items

In addition to the mandatory items in MCRR, companies are free to include any other carbon related information that they perceive as important to them and that may influence their stakeholders' decisions and perceptions. On the other hand, DEFRA has issued their first guidelines for voluntary carbon reporting in September 2009. Hence, in this study, the voluntary disclosure index used is based on the recommended items issued by DEFRA 2009 guidelines. The total of recommended items extracted from the guideline totalled to 38 items, where four of them also form the mandatory items under MCRR and was discussed in the previous section. Therefore, the analysis of the voluntary disclosure will be based on the remaining of the 34 items. The disclosure index and the comparative data is based on the selected year for FTSE100 and FTSE250 is presented in the following Table 5.7.

Table 5.7: Comparative analysis of voluntary disclosure items

	Voluntary Disclosure Items	FTSE 100		FTSE 250		Total		Total Change
		VY	MY	VY	MY	VY	MY	
1	Scope 3 emission/other indirect	1	16	5	27	6	43	37
2	Total gross emission	30	54	27	79	57	133	76
3	Carbon offsetting	2	1	0	0	2	1	-1
4	Green tariff	1	2	0	0	1	2	1
5	Comparative emissions data from previous reporting	34	45	35	50	69	95	26
6	Base year emission data	7	19	3	15	10	34	24
7	Reporting period	4	32	5	52	9	84	75
8	Organizational boundary	6	33	3	48	9	81	72
9	Changes in emission since previous year	25	31	40	39	65	70	5
10	State intensity measurement	29	60	30	86	59	146	87
11	State the reason for intensity measurement choice	1	6	0	8	1	14	13
12	State the reason for any significant changes in intensity measurement from the previous year	0	0	0	0	0	0	0
13	Stating for each activity the percentage of activity data estimated	1	4	0	3	1	7	6
14	State and specify each scope	6	21	4	36	10	57	47
15	State the conversion tools / emission factors used	8	34	11	70	19	104	85
16	State the base year chosen	26	31	9	24	35	55	20
17	State approach used to set the base year	0	1	2	4	2	5	3
18	State base year recalculation policy	0	1	2	0	2	1	-1
19	State reason for base year emissions recalculation	2	2	2	3	4	5	1
20	State emission or reduction target.	35	39	31	24	66	63	-3
21	State scopes covered in the target	3	6	4	2	7	8	1
22	State target completion date	35	39	31	24	66	63	-3
23	Provide a brief overview of progress towards target	17	22	10	10	27	32	5
24	State the name and position of the person(s) responsible for achievement of this target	0	0	0	0	0	0	0
25	Detail of specific emission exclusion	4	17	3	19	7	36	29
26	Percentage of emissions excluded (estimation)	0	1	1	2	1	3	2
27	Explanation for the reason of exclusion	1	15	2	12	3	27	24
28	Provide a breakdown by country of total GHG emissions	1	0	0	5	1	5	4
29	Provide detail of any exclusions of countries if a global total is reported	0	1	0	1	0	2	2
30	State external assurance received	7	19	2	21	9	40	31
31	Provide copy or link to assurance statement	1	10	1	6	2	16	14
32	State the type of carbon credit/ Carbon Offsetting	1	0	0	0	1	0	-1
33	State the supplier and the name of the tariff	0	1	0	0	0	1	1
34	State the percentage of additional carbon saving associated with the tariff	0	0	0	0	0	0	0

The table illustrates that the number of companies disclosing particular items does not always change between the voluntary and mandatory years. Some of the disclosure items are not widely used being disclosed by a small number of companies for both years. Examples of this include the information in regards to the green tariffs, carbon credit or offsetting, and the classification of emission by country. It is also the case that some of these voluntary items may not be relevant to a particular company. For example, a company will not disclose carbon emissions by country if they are only operating in the UK. On the other side, the number of companies disclosing some items does not increase so much in the mandatory year because many of the companies were already disclosing it in the voluntary year. For example, more than 40% of the companies have already provided data on the changes of their emissions since the previous year in the voluntary year. Therefore, the increase in the mandatory year does not substantially change the overall number of companies reported.

Since the main objective of the chapter is to seek for the difference and change that have occurred between voluntary and mandatory years; hence the following discussion will only focus on the items that show differences between the selected years. The discussion of the findings are discussed based on the following disclosure items:

5.3.1.1 Changes in Reporting of Scope 3 Emissions and the explanation of each scope

According to DEFRA (2009, 2013), Scope 3 (other indirect) emissions are those emissions as a consequence of company's actions, which occur at sources which a company does not own or control and which are not appropriately classed as scope 2 emissions. Examples of scope 3 emissions are business travel by means not owned or controlled by the company, waste disposal, or purchased materials or fuels.

In the voluntary year, only six companies disclosed this type of information in their annual report. However, since companies has to report scope 1 and scope 2 emissions under MCRR, some companies have made more effort to calculate and disclose their scope 3 emissions too. This has increased those reporting to 43, representing 27% of total companies. In addition to scope 3, companies not only classify their emissions into scope, but this classification has encouraged companies to also define their own scopes and disclose it their annual report. For example, SSE Plc (2014) define their scope 1 and 2 as:

"Scope 1 comprises generation, operational vehicles, sulphur hexafluoride, fuel combustion, and gas consumption in buildings. Scope 2 comprises distribution losses, electricity consumption in buildings and substations." (SSE Plc, 2014)

As a result, the disclosure of the explanation of scope has increased from 10 companies in the voluntary year to 57 in the mandatory year.

5.3.1.2 Changes in Reporting of total emission and comparative emission

The disclosure of the total emissions item is one that has a high increment in mandatory year. In fact the total disclosure of total emissions is higher than the emissions by scope. This is because, for those companies that not yet had the ability to distinguish the emissions by scope; the total emissions will be their choice. Consequently, the total emissions disclosure has shot up from 36% in voluntary year to 84% in mandatory year.

Besides the current year emission data, companies also voluntarily disclose comparative emissions from the previous year. Comparative emissions are recommended by DEFRA as it makes the information more useful and informative. Providing comparative emissions data from previous year helps the users such as management, government and shareholders to evaluate companies' performance in this area. In the year 2010/11 reporting, about 54% of the sample companies in FTSE100 and 37% by the FTSE250 companies fulfil this recommendation. In total, this disclosure rise by 38% in the mandatory year in comparison to voluntary year.

As this item become mandatory starting from the second year of mandatory reporting, this information is expected to increase in the following years. Beside the mandatory requirement, the first time reporter (as a result of MCRR) like Inchcape Plc and Aveva Plc, they will only have comparative data in subsequent years. As for ITE Group Plc, even though they have previous data, however in 2013/14 they have changed the coverage of their emissions, where this year is the first year they report the emissions for the group; thus making previous data incomparable. As reported by them:

"This is the first year of collecting data on a Group wide basis and so will act as the benchmark year. This also means that no comparatives are presented." (ITE Group Plc, 2013).

Further, another reason found for the non-disclosure of comparative data is because the companies feels that the previous data is no more comparable as they change the calculation method. As claim by AMEC Plc:

> *"We have previously provided estimated calendar year figures for CO2 emissions, using Defra emission conversion factors. As more than 70 per cent of our revenue is generated outside of the UK we have switched to using national conversion factor guidelines (e.g. EPA, Environment Canada) where appropriate. As a result, carbon data previously reported is no longer directly comparable." (AMEC Plc, 2013)*

Some companies like Unilever (2013) and Reckitt Benckiser Group (2013) do not provide the comparative emissions data with the previous year but state the change that have taken place over time. For example, having only reported scope 1 and 2 emissions with intensity emission for the current year, Unilever Plc further reported that:

> *Total Scope 1 and 2 emissions during the reporting period have demonstrated significant reduction compared to the previous reporting period. They have also decreased significantly compared to the 2008 baseline…Absolute emissions reduced by 3.0% compared to the previous 12 months (a reduction of 5.2% per tonne of production) and by over 830,000 tonnes+ (32% per tonne of production+) compared to the USLP baseline year (2008). (Unilever Plc, 2013)*

In addition, some companies like to compare the current year emission data with base year data rather than previous year data.

5.3.1.3 Changes in Reporting of intensity measurement and the reason for its choice

Since disclosing the intensity ratio is usually accompanied by a statement defining how the company measures intensity; therefore they rise consistently together. As the intensity emissions is required under MCRR, the intensity measurement also increased by 49% and 59% in FTSE100 and FTSE250 respectively. On the other hand, the number of companies disclosing how they measure intensity is not always equal to intensity emissions disclosure as there are cases (in the voluntary year), where companies did mention the intensity measurement but do not report their intensity emission number.

Even though companies have to report the intensity of their emission, not many companies disclose the rationale behind their choice of the intensity measurement.

Among the reasons why organisations feel that the ratio they choose is appropriate are because it related to their business operations; as well as the direct relationship that the ratio has with the emissions amount. As an example, WPP Plc (2010) suggest that employee headcount is the most suitable intensity measurement for them because headcount is closely linked to the level of business activity. However, in their 2013 report, they have reported their intensity ratio using two intensity measurements; employee headcount and revenue. On the other hand, Aggreko Plc (2013) chose revenue as the intensity ratio as the majority of the GHG emissions they report are generated by customers operating their fleet.

5.3.1.4 Changes in Reporting of conversion tool

The disclosure of conversion tools scores the second highest increment in comparison of voluntary and mandatory year, behind the intensity measurement. The finding from Table 5.7 shows that the disclosure has increased tremendously from only 19 to 104 in mandatory year. This increment is related to the increment in the methodology disclosure. Even though this item is not required under MCRR as methodology; however this item is always reported together with the reporting methodology under the annual report. In fact, some of the companies consider the items as part of the calculation methodology.

5.3.1.5 Changes in Reporting of Disclosure Period

As mentioned earlier, companies are only required by MCRR to include their emissions reporting period if it is not the same as accounting period:

> *"The directors' report must state if the period for which it is reporting the information required by paragraph 15(2) and (3) is different to the period in respect of which the directors' report is prepared." (Companies Act, 2006, para 19)*

Through the analysis of the reporting, only a few mentioned that their emissions period is different from their annual report's period. As a result, it was assumed that those who did not mention a difference; their emissions period should be the same as their annual report period. The following is the example of the statements mentioning the different period of emissions as compared to annual report period:

"Due to the delay in hotels receiving their energy bills it is not possible to report accurately GHG emissions from 1 January to 31 December and therefore we have defined our GHG emissions reporting year as the period commencing on 1 October and ending on 30 September." (Intercontinental, 2013)

"In collecting this data, SIG has used a period non-coterminous with the Group's financial year, with current year data reflecting the year to 30 September 2013. This is because much of the data is captured via utility bills, which tend to be quarterly. A September period end for carbon reporting, therefore, allows for actual data to be used as opposed to estimates.." (SIG Plc, 2013)

The above two quotations show how companies reported the difference between the annual report period and the emission period; together with the justification for the difference. Both examples show that the reason for these differences is closely related to the accuracy of the data. Companies tend to argue that they are choosing the period for which they can get as accurate data as possible for the disclosure.

On the other hand, even though not required, many companies still disclose their emissions reporting period. Comparing between FTSE groups, the result shows a similar pattern of increment between FTSEs; where for FTSE100, the disclosure figure has increased from 6% to about 51%; where else for FTSE250, the increase is from 5% to 55%. In total, 84 companies have included this item in the mandatory year as compared to only 9 companies in the voluntary year of reporting.

Some of the reporting companies emphasise that their emission period is consistent with annual report period. For example, Afren Plc (2013) reported that:

"Our reporting period for our emissions data continues to be consistent with the Company's financial reporting period, being the calendar year ending 31 December 2013." (Afren Plc, 2013)

As for the rest of the companies, their period of disclosure is basically provided in terms of the year or the year end date of the emissions to their emission figure.

5.3.1.6 Changes in the Reporting Boundary

According to DEFRA (2009), the reporting boundary determines which emissions are measured or calculated and reported by the organisation. Thus, even though it is not part of the MCRR disclosure requirements; it is important for the company to identify their disclosure boundary in calculating their emissions so as to be as clear as possible

on which emissions are included or excluded from the reporting. Consequently, the analysis of the reasons for emission disclosure exclusion shows that being out of the reporting boundary is one of the reported reasons. Realising the importance of the boundary in their emission calculation, the disclosure of this item has escalated massively from 9 companies in voluntary year to 81 companies in mandatory year.

In determining the boundary, it is easy if the company has a simple organisational structure and own 100% of the assets that they operate. In this case, the company would report on the impacts from everything that they own and operate. However, for the company with some entities may be part-owned, or owned but not operated and vice versa (DEFRA, 2013), they have to decide their reporting boundary and be consistent about it. The suggested boundary outlined in the DEFRA guidelines (2013) includes financial control boundary, operational control boundary and equity boundary. The example of the boundary setting is illustrated from Sage Plc (2013) as follows:

> *"We have reported on all material emission sources which we deem ourselves to be responsible for. These sources align with our operational control and financial control boundaries. We do not have responsibility for any emission sources that are beyond the boundary of our operational control. For example, business travel other than by car (including, for example, commercial flights) are not within our operational control and, therefore, are not considered to be our responsibility." (Sage Plc, 2013)*

The above quotation illustrates that Sage Plc has chosen both operational and financial control boundaries to determine their emissions to be reported. Consequently, any emissions that are considered to be outside these boundaries will be excluded from their reporting.

5.3.1.7 Changes in Reporting of Emission Exclusions Data

Companies may not be able to report all of its emission data. Some of the emissions data may be excluded from the data for several reasons. The most popular reasons given are related to the reporting boundary, materiality and the availability of the data at the reporting date. Including the exclusion data is part of the completeness principle in the reporting (DEFRA, 2013). The non-disclosure of this data would mislead the reader on the real total of the emissions produced by the company.

The finding from the annual reports shows that despite the increased disclosure of this item in the mandatory year as compared to voluntary year, the total disclosure is still low. The number of companies disclosing emission exclusion has increased from 7 to 36, thus represent a total of 23% of the total. In addition to that, only some of the companies that include this information disclose the reasons for the exclusion. This is not good as the readers need to know whether the reason for this exclusion is valid and acceptable or not. On the other view, the reason for the non-disclosure of the exclusion may be because the companies managed to collect and measure all of their related emissions. However, this is quite unlikely especially in the first year of the mandatory year of reporting.

5.3.1.8 Changes in Data Verification

Another important change between these two years is in terms of data verification. Verification disclosure has increased from 9 in voluntary year to 40 in mandatory year. Verification of emissions data is important as verified data will increase the quality of data, thus increase users' confidence in using this information for decision-making (Simnett, Nugent and Huggins, 2009). Data verification also helps avoiding perceptions that companies are 'greenwashing' (Simnett et. al, 2009). For example, Petrofac include this information in their reporting:

> *"In 2013, we commissioned Ricardo-AEA a qualified independent party to assure and validate our greenhouse gas emissions data collection processes… Following its review, Ricardo-AEA concluded that we have made good progress in calculating our carbon footprint and have set up credible processes for collating data and calculating emissions." (Petrofac, 2013)*

Besides mentioning the verification as their extra effort to ensure that their data is accurate; quoting the good opinions from the service provider is an added value that might influence the readers' impressions towards organizations.

Data verification is not required by MCRR but is highly recommended by DEFRA. Even though statutory auditor of the financial statements is not required to verify emission data in annual report, according to DEFRA Guidelines (2013, p. 16-17), an auditor will be required to consider the following:

(1) whether the information is consistent with the financial statements and
(2) whether the information is materially incorrect or materially inconsistent with the financial statements based on the knowledge acquired by the auditor in the

(3) the need to qualify their report if they become aware of such an inconsistency or apparent misstatement, and that matter is unresolved. In addition, whilst they are not required to consider whether the strategic and directors' reports comply with the relevant laws and regulations, if they become aware of any material non-compliance (which might include becoming aware of failure to provide material environmental data), then they would need to discuss the matter with management and those charged with governance.

Verification and data assurance might be performed by internally, externally, or both. This service may be given externally by consultants such as Carbon Clear or external auditors such as KPMG LLP and PriceWaterhouseCoopers (PWC). As for De La Rue Plc, the validity and completeness of the data were checked by both internally and externally (by Carbon Clear). The internally assured data was used to calculate the GHG emissions for the Group. In addition, KPMG LLP has also reviewed the process used by the company for collecting and analysing the data.

Verification activities might be performed in accordance with certain standards and certification such as ISO 14064-3:2006 and Standards on Assurance Engagements ISAE3410 and 3000; which are the widely-used standards for the verification of GHG emissions reports (DEFRA, 2013). In carrying out verification process, Simnett (2009) suggests that any assurance guidance will need to give attention to: the need for the engagement team to include or have access to specific expertise in the evolving legal/regulatory/ trading market environment; the physical processes by which carbon emissions are generated, reduced, avoided or removed; the methods available to quantify, monitor and report on carbon emissions and the uncertainties around these methods; and the determination of appropriate carbon emission boundaries.

Associated British Food Plc reported that, in order for their assurance provider (KPMG LLP) to form their opinion, they have performed a range of procedures which included interviews with management, examination of reporting processes and documentation, and testing of selected data from various sites, businesses and at group level. The summary of their work is included within their assurance opinion. Performing the verification for non-financial performance information and greenhouse gas quantification in particular, is challenging because it is inherently more subjective than financial information (Associated British Food, 2014)

According to European Commission (2007, pg. 30), the objective of emission verification is “to ensure that emissions have been monitored in accordance with the guidelines and that reliable and correct emissions data will be reported”. Based on this objective, there is a possibility that companies are encouraged to get assurance for their data in order to ensure that they are on the right track of complying with MCRR. Verification will ensure the accuracy of their data is in line with the boundary and methodology that they have chosen. Disclosing misleading data bring reputational risk to the company; thus assurance provides a check on the value and authenticity of the data in the public domain (DEFRA, 2013).For instance, Bunzl Plc has collected and analysed environmental performance data from across its businesses for a number of years. However, as the Group has grown, the collation of this data has become more complex. Consequently, they obtained an external independent assurance of their carbon emissions and fuel usage data for the first time in the first mandatory year. Limited assurance was provided by KPMG using the International Standard on Assurance Engagements (‘ISAE’) ISAE 3410: ‘Assurance Engagements on Greenhouse Gas Statements’. Two type of assurance may be given on carbon disclosure: limited assurance and reasonable assurance. Limited assurance, even though it means ‘nothing has come to our attention’ to suggest that the report is unfairly stated, is commonly given on carbon emission disclosures (Cooper and Owen, 2014).

5.3.2 Voluntary Items Disclosure Performance

In measuring the disclosure performance on voluntary items, the scoring index is classified into four groups; 0 score, low, medium and high score. Since the total index is 34, the range for each scope is about 11 each (34 divided by 3). This has resulted in the classifications and findings produced in Table 5.8 below.

Table 5.8: Reporting performance classification based on voluntary disclosure scoring index

	Number of Company			
	FTSE100		FTSE250	
Disclosure Score	Voluntary Year	Mandatory year	Voluntary Year	Mandatory Year
0 point	7	1	36	1
Low (1-11 points)	55	47	55	90
Medium (12-22 points)	1	15	0	5
High (23 -34 points)	0	0	0	0
Total	63	63	95	95
Weighted average	4.57	8.98	2.71	7.12

From the above table, it can be summarised that the level of voluntary disclosures has increased for FTSE100 and FTSE250 companies in the mandatory year. This is evidenced through weighted average scores, where FTSE100 companies scored 8.98 points in the mandatory year compared to 4.57 in voluntary year. Similarly, FTSE100 have scored 7.12 in the mandatory year, nearly 3 times more than the voluntary year score of 2.71. Even though the majority of companies scores low points for both years, a huge improvement is found for 0 point disclosures. From 27% of companies with zero points in the voluntary year, this figure has fallen to 1% in the mandatory year. This means that 41 companies that have not reported any voluntary disclosure before have started to do so in the mandatory year. This has produced the increase in the low scores category for FTSE250 to increase from 55 to 90 companies in mandatory year. Beside the fall in zero disclosure company, another positive change is on the increment in the medium score level. In FTSE100 the total of medium scorer has increased from 1.6% to 23.8 percent, while for FTSE250 the number has increased from 0 to 5.3% in mandatory year. To summarise, the FTSE100 has not experience such large movements across reporting levels, with small improvements in both zero and low disclosure but a very significant shift to medium levels of disclosure. The 100 index also has better average scores as compared to FTSE250 in both years. Despite lower average scores, the FTSE250 has recorded a huge improvements in the reduction of zero scoring companies. In term of quality, FTSE100 is better (higher weighted average), but the FTSE250 has shown very significant improvements in disclosures.

Besides the voluntary disclosure scores by FTSE, an analysis has also done for the disclosure score by industry. The finding is presented in Table 5.9 below:

Table 5.9: Voluntary disclosure scores by industry

Industry	Number of Companies								Total Company	Weighted average of	
	0 point		low (1-11 points)		medium (12 to 22 points)		high (22 to 34 points)				
	V	M	V	M	V	M	V	M		V	M
Oil & Gas	6	0	6	11	0	1	0	0	12	2.58	7.33
Chemicals	0	0	2	2	0	0	0	0	2	3.5	6.5
Basic Resources	4	1	7	9	0	1	0	0	11	2.45	5.27
Construction and materials	0	0	2	1	0	1	0	0	2	8.5	10
Industrial goods and services	9	0	31	38	0	2	0	0	40	3.73	7.75
Automobiles and parts	0	0	1	1	0	0	0	0	1	2	8
Food and beverage	1	0	6	6	1	2	0	0	8	4.88	8.63
Personal and household goods	3	0	6	7	0	2	0	0	9	3.44	9
Health care	2	0	4	4	0	2	0	0	6	3	9.33
Retail	2	0	13	15	0	0	0	0	15	4.07	7.8
Media	3	0	6	7	1	3	0	0	10	4.1	9.3
Travel and leisure	7	1	10	13	0	3	0	0	17	2.47	8
Telecommunications	0	0	5	5	0	0	0	0	5	4.4	6.4
Utilities	1	0	7	6	0	2	0	0	8	3.88	9.75
Technology	5	0	7	11	0	1	0	0	12	2.25	7.33
Total	43	2	113	136	2	20	0	0	158	3.45	7.89

The above table shows that in the voluntary year, the majority of companies in all industries attracted a low score for voluntary disclosure of between 1 to 11 points. In addition to that, in 11 of the 15 industries at least one company scored zero for voluntary disclosure. However, this situation has changed in the mandatory year. The number of zero scorer has fallen, leaving two companies that belong to the two industries which are basic resources and travel and leisure. The weighted average scores demonstrate them all industries have relatively low average scores for both years. On the other hand, all industries show improvement in term of the average score in mandatory year. Comparing the average score, the highest scoring industry is construction and material, with the score of 8.5 in the voluntary year and 10 in the mandatory year. Meanwhile, automobile and parts get the lowest scores for voluntary year (2 points) and basic resources is the lowest scorer (5.27 points) for mandatory year.

5.4 CHANGE IN THE PRESENTATION OF DATA

The differences between the two year's disclosures are not only found in terms of the content of the disclosure, but also the way the data is presented. In the voluntary year, despite having guidelines complete with the template of reporting, companies choose to disclose their data in the simplest and most convenient way to them including sentences, tables or graphs/diagrams. With the introduction of MCRR, the presentation of carbon reporting becomes more standardised. In relation to the change in the disclosure presentation, AMEC, 2013 reported that:

> *"In 2013 we have made further improvements in the reporting of our carbon emissions…Our carbon reporting and data capture systems have been updated in line with the new mandatory carbon reporting requirements. This is the first year in which global greenhouse gas emissions have been presented in this format." (AMEC, 2013).*

Comparing AMEC Plc reporting for both years; there is no doubt that the transformation is huge. Having only a graph to show their emission reduction target to be achieved in 2013; their 2010 carbon disclosure is rather too simple and less informative as compared to disclosure for 2013. The 2013 disclosure, even though is not long, but more comprehensive and enough to cover all the information required by MCRR. The direct and indirect emissions are presented in a table together with intensity emission. In addition, other related information such as methodology, conversion factor, the reporting period and the reporting boundary are presented in a narrative as a note to explain the emission table.

The observations on the companies' annual report show that the voluntary year's carbon report is simpler and most companies prefer to use narrative rather than any other presentation tools. The following Table 5.10 shows the use of other presentation tools in climate change and carbon disclosure besides narratives in both reporting years.

Table 5.10: Presentation tools used in climate change and carbon reporting

	voluntary year			mandatory year		
	FTSE 100	FTSE 250	Total	FTSE 100	FTSE 250	Total
Table	29	40	**69**	52	89	**141**
Graph	29	22	**51**	32	39	**71**
Diagram	6	8	**14**	6	14	**20**
Picture and others	14	22	**36**	14	22	**36**

The above table demonstrates the changes and improvement made by companies in their disclosure presentation in the mandatory year as compared to the voluntary year. In the mandatory year, the use of table scores the highest point where 141 companies (89.2%) have used it in their report, represent a 45.5% of increment as compared to voluntary year. Meanwhile, the use of graph falls second with 71 companies (44.9%) have used it in their report. The finding suggests that companies found the use of tables and graphs are helpful in presenting their current emission performance, as well as in making comparison with previous years' performance. The investigation of companies' reports found that table is commonly used by the company to summarise or report all the emission data including the MCRR required elements; including emissions by scopes, total emissions, intensity emissions, as well as emissions for previous years and base year. As for the use of diagrams, pictures and other presentation elements, the difference between the two years in not significant. The 'other' presentation tool includes the use of symbols, and the highlighted performance numbers.

Besides a huge increase in the use of table and graph in companies' disclosure, there are some companies that prefer to use narrative in their report and do not use any of the above mentioned presentation tools for both years. On the other hand, 53.8% of the companies in mandatory year have used more than two presentation tools in addition to narrative. Three companies; TUI Travel Plc, United Utilities Group Plc and Balfour Beatty Plc used all the above presentation elements in their disclosures.

For certain companies, the improvement may not be in term of presentation tools used, but the content included in the presentation tools. For companies like SIG Plc, even though both years make use of both narrative and tables, and the way they present the table is similar, however improvement is made to the details. In their emissions table for 2010/11, they report the detail source of the emissions for each scope,

covering scope 1, 2 and 3, as well as the intensity emissions for the overall total. In comparison, for the year 2013/14, the table was enhanced with the comparative emissions with previous two years data, both absolute and intensity emission.

Unlike SIG Plc, WS Atkins have a similar presentation for their reporting for both years. Their cross reference of scopes, region and source of emissions table has the same information for both years. The difference lies in their intensity emission information, where 2010/11 emission is presented in graphs based on region, while in 2013/14 reporting, the information is text-based and based on the total emissions.

One of the most comprehensive data reported with the use of multiple types of presentation tools was by UBM Plc (2013). Comparative intensity emissions including the base year data were presented in a graph; while the emissions by scope were reported in a table, including the detail source of emissions for each scope. The map image was used to mark each of the operation countries with their respective total emissions. In addition to that, the text was used to explain the diagram and table such as the current year changes from the previous year and baseline data, as well as the target setting and the achievement. The information on the methodology, boundary, data verification, scopes, assumption and estimation were nicely written with proper headings.

5.5 CONCLUSION

Overall, the result shows that MCRR has resulted in more companies reporting their carbon emissions and related information. The findings provide evidence that there is a significant difference between the two years disclosure of the two FTSE indices, as well as between industries, especially in the disclosure of mandatory items. The increase in the number of reporting companies and the improvement of the content of the reports is a sign that companies are committed to comply with MCRR, despite its 'Comply or Explain' approach of enforcement. On the other hand, it can be argued that explaining non-disclosure is also complying with requirements.

For voluntary reporting, the disclosure of items like total emissions, base year emissions, comparative emissions, intensity measurement, reporting year, reporting boundary and conversion tools disclosure increase massively in the mandatory year. One of the reasons for this tremendous increment is because some of the items are closely related to the mandatory items. For example, intensity measurement is used

when disclosing intensity emissions; thus the increment in intensity emissions has led the intensity measurement reporting to increase too. The same situation is observed to conversion tools. Since many companies regard conversion tools as part of the reporting methodology, this information will be included together with the reporting methodology as required by MCRR.

In addition to the above mentioned items, the number of companies that commissioned independent party verification of their data has also increased, even though this is not required by the regulations. This a good sign for the company effort towards proving a reliable, credible and more accurate data to the user of their annual reports.

Marked changes were also found in the presentation of reports. Instead of using only text and narrative to tell the story of their carbon performance, companies have applied other presentation tools like graphs, diagrams, photos and tables in mandatory year reports. This help making carbon data more understandable and easy to read, especially to those which is not familiar in this area.

MCRR has also found to cause some of the companies to invest in a better capturing and measurement of carbon data. As reported by AMEC Plc (2013) and Capita Plc (2013):

> *"In 2013 we have made further improvements in the reporting of our carbon emissions…Our carbon reporting and data capture systems have been updated in line with the new mandatory carbon reporting requirements.." (AMEC, 2013)*

> *"We continue to make improvements across our sites, installing smart metering at all sites that come under the UK Government's carbon reduction regulations." (Capita Plc, 2013)*

With the changes made, company reporting is expected to improve over the years. These improvements should result from a greater experience of data collection; more time for report preparation; and better modelling, measurement strategies and systems. Despite MCRR beings required in the annual report, 49 companies mentioned in their annual report that they have reported carbon information in other disclosures such as within their sustainability/CSR reports or the company website. In the next chapter, other sources of company reporting will be searched and any common explanations or story lines in how these disclosures are presented to stakeholders will be identified.

CHAPTER 6: STORIES IN CLIMATE CHANGE AND CARBON DISCLOSURE

6.1 INTRODUCTION

> ***'[We] encourage companies to experiment and be innovative in the drafting of their annual reports, presenting narrative information in a way that enables them to best "tell their story".***
>
> *(The Financial Reporting Council (FRC), 2014[14])*

Corporate storytelling is not new. However, most of the time, corporate storytelling take in the form of oral conversation (Boje, 1991). Despite the encouragement from reporting bodies such as FRC for the company to be creative in reporting their story, the evidence of storytelling in corporate disclosure is limited and less explored. The empirical aim of this chapter is to investigate the storytelling theme around carbon and climate change disclosure and how these stories are presented. Thus, this chapter seeks to address research question (RQ2), which is the investigation of the common stories and messages communicated by organizations in their carbon disclosure.

For this purpose, as discussed in Chapter 3, the corporate storytelling is defined as *"the process of developing and delivering an organisation's message by using narration about organisation (Gill, 2011, 2014; Schultz et al, 2002) which includes morality, behaviours, processes, relationships, action and strategy (Marzec, 2007; Berry, 2001;Dowling, 2006; Gill, 2014); which take place retrospectively, current and prospectively (Boje, 1991; Dowling, 2006; Marzec, 2007; Gill, 2014) to influence stakeholders' perception towards organization by creating a new point-of-view or reinforces an opinion or behaviour (Schultz et al, 2002; Gill, 2014)."*

This investigation on the stories told in carbon and climate change disclosure is not limited to annual reports, but also includes a variety of other disclosure vehicles or media including websites, press releases and sustainability/CSR reports. As stated in Chapter 4, twelve companies have been chosen for analysis in order to fulfil this objective. The selection of the companies is based upon characteristics (discussed in

[14] https://www.frc.org.uk/Our-Work/Publications/Accounting-and-Reporting-Policy/Guidance-on-the-Strategic-Report.pdf

detailed in Chapter 4) but includes those companies with the highest scores for carbon disclosure found in Chapter 5.

This chapter will proceed with the discussion of climate change and carbon stories theme found in the data. There are four themes: stories to establish awareness on climate change, stories around the emission performance numbers; stories on effort and commitments; and stories of achievement. The chapter ends with a discussion and conclusion.

6.2 STORIES IN CLIMATE CHANGE AND CARBON REPORTING

Similar to the study carried out by Boje (1991), the stories in organizations' climate change and carbon reporting were "not found to be a highly agreed-upon text, told from beginning to end, as it has been studied in most prior story research" (p. 106). Rather, the stories were found to be dynamic, varied by context, and were sometimes terse, requiring the audience to fill in silently major chunks of the story line, context, and implication (Boje, 1991, p. 106). As explained in Chapter 4 (refer section 4.5.2), the selection of themes used in this chapter is identified through the recurrent or dominant issues found in collected data. Based on the analysis of the selected companies, the common story themes found in climate change and carbon disclosures are the stories on climate change; stories around the emissions numbers; stories on companies' effort and commitment in mitigating climate change and reducing carbon emissions; and stories on their achievement in this area.

6.2.1 Establishing awareness on climate change: Sharing is Caring

The analysis undertaken identified that three of the sample companies provide stories on their websites in the form of videos to educate the audience on what climate change is and how it impacts upon society and the planet as a whole. TUI Travel for example provide a video[15] that tells the story of how a company's activities and their customers' activities impact the environment. The story is about the collaboration of TUI Group with PWC and the Travel Foundation to measure the impact of 60,000 TUI customers who visited 8 hotels in Cyprus during 2013. Their research demonstrates the importance of understanding the "big picture" impacts of tourism on a destination; covering economic, social, environmental, and tax impacts. Their findings show that

[15] http://www.tuigroup.com/en-en/sustainability/news/2015/20150713-TIMM

whilst the environmental damage caused by one tourist may be small, it is significant when multiplied by millions of tourists over the years. Therefore, the story concludes that these impacts need to be carefully managed, if a destination is to stay attractive for years to come. Commenting on this story, Jane Ashton, TUI Group Director of Sustainability[16] mentioned:

> *"It gives us brand new insights into how to further improve the positive and minimise the negative impacts of tourism. Our business and our customers' satisfaction is dependent upon thriving communities and well-managed environments, so as well as taking action ourselves, we are sharing the learnings from this project with the wider industry and with destination governments, so collectively we can make a difference".*

One of the message from the above story is that Greenhouse gases (GHG) are the company's most significant environmental cost. Even though it was found that that the emissions from the activity investigated represents less than 0.01% of total GHG emissions in Cyprus, the impact more than doubles if flights to/from Cyprus are included.

Unilever Plc provide a video[17] to tell a story of what climate change means, and how it happen. Unlike TUI Travel, the video is not produced by the company itself, but was created by NASA. In my point of view, this video is well created as the video not only informative, also very easy to be understood even by children. The story explains how the planet warms with climate change and why these changes harm the planet. In addition, the story also highlights the symptoms of climate change that are already occurring around us.

Similar to Unilever Plc, the video included in BT Plc website is not created by the company itself. BT Plc recommended the readers to watch five videos that demonstrate the climate change problems and issues around the world. In their web page, BT provide trailers and summaries for all of these videos. Unlike the NASA video, these stories are targeted at the adult audience as they are rather complicated for the young age audience. BT Plc stated:

> *"Laying in bed with your lights off watching these won't help the planet, but it might inspire you to join a group or go on a march, or even turn the planet's*

[16] http://www.tuigroup.com/en-en/sustainability/news/2015/20150713-TIMM.
[17] https://brightfuture.unilever.us/stories/473087/What-is-climate-change--How-can-we-take-action-.aspx

wellbeing into a legitimate career…Whatever you do after watching these, climate change won't be far from your mind."[18]

One of the videos titled the 'Age of Stupid' was commented by George Monbiot[19] as "the most powerful story of all, endlessly narrated by the hired hands of the fossil fuel industry…that we are both all-important and utterly insignificant. We are too important to be denied any of the delights we crave, but too insignificant to exert any impact on planetary processes. We fill the whole frame of the story when it suits us and shrink to a dot when that scale is more convenient. We are capable of occupying both niches simultaneously." Meanwhile, another video 'Cowspiracy' tell the story of the impact of animal agriculture and how this industry contributes significantly to climate change through enormous GHG emissions, deforestation and the use of water and food to feed them. On the other hand, this happens because of the high demand for poultry and dairy products for human daily life.

As the focal point of corporate story is message; this type of story would carry the message that the organization is caring to its environment and society, thus they should make the society aware of the negative impact of the climate change to them and the planet as a whole. Beside knowledge sharing (Sole and Wilson, 1999; Gill, 2011), this type of storytelling may stimulate audiences' action (Marzec, 2007; Baker and Boyle 2009) to minimise their activities and action that contribute to carbon emission such as reduce the consumption of poultry and dairy products. Therefore the story on the climate change not just raise awareness of what climate change is; and what the impacts are; but also raise the awareness of shared responsibility among all parties in the community.

6.2.2 Making sense of emission performance: Stories around the emission number

In reporting emissions data, companies were found to have a high propensity to provide data that are credible (Chithambo, 2013; Malamatenios, 2014; Ioannou and Serafeim, 2014) and reliable (Cooper and Owen, 2014), as to increase stakeholders' confidence and trustworthiness in their reporting (Salama, Dixon and Habbash, 2012; Cooper and Owen, 2014). Therefore, an emission number without narrative

[18] http://home.bt.com/news/features/5-eye-opening-documentaries-to-watch-on-climate-change-11364053227690

[19] https://www.theguardian.com/commentisfree/2008/jul/21/climatechange.scienceofclimate change

explanation; or a storyline mentioning how much carbon being emitted for the year would not be enough to provide transparency that leads toward providing credible and reliable data to the readers of corporate disclosure. This notion is supported by ISCA (2015) as the following:

> *"One of the challenges with reporting sustainability and stakeholder issues is that many of the measures, for example around carbon emissions, are not readily understandable to the casual reader of a report. To comply with the requirement that reporting be fair, balanced and understandable, it is therefore essential that sustainability measures are reported in a way that clearly explains exactly what they are for" (ICSA, 2015*[20]*)*

Chapter 3 has included the discussion of how storytelling is used as a mechanism for creating company identity and sensemaking. However previous research (such as Reissner, 2011) investigate how stories can help staff make sense of change in the organization. In the case of carbon reporting however, the story is used to make sense of the emission number reported. As mentioned in Chapter 5, MCRR requires three emissions numbers to be disclosed; Scope 1 emissions, Scope 2 emissions and an emission intensity ratio. Consistent with the recommendation by ISCA in the above quotation, a clear story is needed to explain how the emission number reported is actually measured. This story is essential to help stakeholders have a better understanding of companies' carbon reporting. One may argue that a number can speak for itself, but, on the other hand, it is not enough to ensure the data disclosed is understandable and useful. Stories, therefore are found to be used by the companies to explain what is going on 'behind the scenes' to get to the emission number to be reported.

Boje et al (2006) illustrated that numbers play an important role in a company's story especially in explaining financial performance. In their studies, they have investigated how a company in trouble, like Enron, manipulate the story around the numbers to influence their stakeholders especially their investors and employees during the time of turmoil. Their study provides evidence suggesting that numbers and stories complement each other and have their own power of influence. The story provided by the companies to accompany the numbers can influence how the numbers could be interpreted by the readers of information. As a result, the interpretation of numbers can rhetorically influence the readers' impressions towards organization's performance.

[20] https://www.icsa.org.uk/knowledge/governance-and-compliance/careers/feb-2015-achieving-excellence-sustainability-and-stakeholder-disclosure

This is what Boje et al (2006) label as the 'rhetoric of quantitative justification' or 'qualitative study of quantitative metrics employed to persuade' (p. 458).

The story in making sense of the carbon number is found to be a combination of coherent storylines, linking together to develop a complete story. A coherent story usually has a beginning, middle and end (BME) (Boje, 2006). On the hand, as discussed in Chapter 3, this is not always the case. Even though the storylines are related to each other, the BME structure sometimes is not so obvious. The analysis shows that typically, this story begins with a statement showing that what they are reporting is in line or in compliance with the mandatory requirements. This is often followed by the middle part, consisting of the storylines regarding those elements that affects the emission number reported. This includes the calculation method, the period of the data, the boundary of emissions included, the source of the emissions in the form of scopes, the conversion tools that the company used in order to convert the raw emissions data into carbon equivalent, the ratio used in order to convert the absolute emission data into intensity emission as required by the law, and any exclusion of data and the reason for it. In addition, some companies also include the information on the amount of increase or decrease as compared to the previous year or the base year.

Most of the time, this story ends with the inclusion of the information related to the data verification of the emission disclosed. Besides a detailed explanation of how data reported is captured and measured; credibility and reliability of the data is also increased through third party verification (Adams, 2004; Dragomir, 2012; Downie and Stubbs, 2012; Cooper and Owen, 2014). The example and the explanation of the storylines included in this type of story is discussed as follows:

As stated earlier, the story around the emission performance usually starts with the compliance statement. Based on analysis of data in Chapter 5, the study found that 7 of the 12 sample companies have started their story with this statement, especially in the first year of the MCRR compliance. For example, UBM Plc begins their story with the following statement:

> *"We have reported on all the emission sources required under the Companies Act 2006 (Strategic Report and Directors' Reports) Regulations 2013." (UBM Plc, 2015).*

Beside the compliance statement, the analysis found that 3 companies start their emissions report with methodology while another two use boundary. On the other hand, the investigation into the current year disclosure shows that the pattern may change from year to year for some companies, while others may prefer to follow the same style of reporting each year.

In compliance with MCRR, companies need to disclose their emissions by scope as well as their intensity emission. However, in order to be able to do this a number of decisions need to be made by the management. In making sense of the emissions number reported, the information of emission boundary, method, and period of reporting are important as a change in these elements would produce a different number. For example, the choice of boundary, whether operational[21], financial[22] or equity[23] would affect the emission exclusion in the report. As an example, Diageo Plc (2013) has chosen an operational control emissions boundary. As a result, some of the operations outside of their operational control will not be included in their disclosure. Their report stated that:

> *"Environmental data from joint ventures and associates where Diageo does not have full operational control is not included within the reported environmental figures." (Diageo Plc, 2015)*

The above quote demonstrates that by choosing operational boundary, companies will only calculate and report those emissions from operations that are under their control. Consequently, emissions from operations out of their control such as joint ventures and associates are excluded.

Knowing the boundaries, companies then have to decide on the source of the emissions; or scopes. In general, DEFRA (2009, 2013) have defined all the scopes of emissions based on the source of emissions (please see Chapter 5, Section 5.2.1).

[21] Organisation reports on all sources of environmental impact over which it has operational control. Organisation has operational control over an operation if organisation or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation (DEFRA, 2013).

[22] Organisation reports on all sources of environmental impact over which it has financial control. Organisation has financial control over an operation if it has the ability to direct the financial and operating policies of the operation with a view to gaining economic benefits from its activities (DEFRA, 2013).

[23] Organisation accounts for GHG emissions from operations according to its share of equity in the operation (DEFRA, 2013).

Since companies activities are unique, so their source of emissions are different from each other. As a result, three of the sample companies have defined and categorised their own emissions scope. The example of this is extracted from DRAX Plc story:

> *"Scope 1 for Drax covers the emissions arising from burning fossil fuels, namely coal but also heavy fuel oil and propane, to generate electricity and the operation of some of our plant at the power station, for example, our flue-gas desulphurisation system. The Group's Scope 2 emissions arise mainly from electricity purchased to run operations across our various sites." (DRAX Plc, 2015)*

Knowing the boundary and source of the emission, the next story is related to how companies calculate their emissions or methodology. This is an important piece of information for the user so that they are confident that the method used is reliable. As reported by UBM (2015);

> *"We used the GHG Protocol Corporate Accounting and Reporting Standard (revised edition) published by WBCSD & WRI (the World Business Council for Sustainable Development and the World Resources Institute)." (Annual Report, UBM Plc, 2015)*

As discussed in Chapter 5, most of the companies will also include the conversion factor as part of their methodology. In the case of UBM Plc, the report continues as follows:

> *"Emission factors were US eGRID 2009 and the UK Government's GHG Conversion Factors for Company Reporting in association with Carbon Smart – expiry 31 May 2016." (Annual Report, UBM Plc, 2015)*

In terms of methodology, all of the selected companies have chosen the methodology as suggested by DEFRA guidelines (2009, 2013). As found in Chapter 5, the most popular ones are from GHG Protocol Corporate Accounting and Reporting Standard (revised edition) published by WBCSD & WRI, as well as the guideline from DEFRA itself.

Capturing and calculating whole companies' emissions may not be practical to some companies. Emission exclusion is not just affected by the company's inability to capture all related data; but also by other factors such as the boundary, scopes, materiality and the unavailability of the data. An example of the explanation on exclusion is:

> *"The environmental impacts associated with leased facilities and the carbon emissions associated with company vehicles and leased cars are also excluded and considered immaterial to the company's overall impacts... Carbon dioxide emissions from the fermentation process are not included…as these emissions are from a biological short cycle carbon source and outside scopes 1, 2, and 3." (Diageo Plc, 2015)*

From the quotation, materiality and scopes are the reasons for the exclusion. This is a valid reason for disclosure exclusion as based on DEFRA guidelines, companies only need to report the emissions that are material; and MCRR only requires emissions from scope 1 and 2.

Most of the time, the emissions numbers are not presented alone, but rather in comparison with the previous year's emissions or in comparison with base year data. For example, Diageo Plc have presented their 2015 emissions data in comparison to their base year (2007). Based on their story the base year is used as a basis for them to set the target (such as emission reduction target) and as a basis for calculating progress against their targets. Benchmarking the current year performance with base year and previous year performance helps readers make sense of whether the emission number reported is improving; and the patterns of the emissions throughout those years.

However, between the base year and the current year, there could be changes in the company that cause the previous figures to be incomparable with the current year. For instance, a company might have changed the calculation methodology or the conversion factors for certain reasons. In order to make the previous years' emissions figure and current year comparable, the story includes restatements of the figures and the reason for the restatement. In this case, the following narrative is included in their story:

> *"The base year environmental impact data, and data for intervening years, are adjusted to reflect acquisitions, divestments, updates to databases for CO2 e emission factors, any errors in methodology and calculations, and any significant changes in reporting policy that result in a material change to the baseline of more than 1%.... We also restate data where …." (Diageo Plc, 2015)*

Giving reasons for the restatement of the figure gives justification of the changes as well as the action taken. Without this explanation, readers might have difficulty

understanding why the figure reported in the current year is not consistent with the previous reports.

As stated earlier, as well as absolute emissions by scopes, MCRR also requires companies to disclose their intensity emissions; the emissions as a ratio to the activity or financial metric. According to DEFRA (2013), intensity measurement facilitates comparison over time and comparison across different organisation sectors and products. Therefore, in choosing the intensity measurement, a company should choose one or two that best reflect their activity, and that are capable of being compared with other similar companies in the same industry. For Imperial Tobacco for instance, net tobacco revenue is chosen for few reasons:

> *"Our relative emissions are expressed against net tobacco revenue, which is consistent with the standardised CDP reporting format and facilitates meaningful comparison with other businesses that report both their emissions and financial fundamentals." (Imperial Tobacco, 2015)*

Revenue as an intensity measurement is a popular choice to represent companies' relative emission (refer to Chapter 5). Since many companies have used this measurement, then it is perceived as a good choice for them for benchmarking. As reported by BT Group Plc (2014), they have chosen per unit of revenue as their intensity measurement in order to help benchmarking their performance against other organisations.

As mentioned earlier, data verification helps to increase the credibility and reliability of the data reported. Based on the analysis in Chapter 5, it was found that 6 of the companies have included this information in their emission report for the year 2013/14. On the other hand, this storyline is not always the end of their emission story. For example, UBM Plc disclose this information after their compliance statement and methodology; even before their emission number.

Since the story around the emissions figure is to explain what has been done, it is rather retrospective in nature. Even though the above storylines may not be chronological, they are all related to each other and impact the emission number reported. In addition, the occurrences of companies' decisions in regards to carbon disclosure such as the choice of reporting boundary type and the calculation methodology may take place one after another, as recommended by the guideline.

6.2.3 Establishing Trust: Stories of Effort and Commitment

According to Dowling (2006), another use of corporate communications is to establish trust, and the basic condition for establishing trust is through raising awareness and generating understanding and appreciation of the organization among key stakeholder groups. In regard to carbon reporting, companies make use of their efforts and commitment stories to achieve the above objectives. The analysis found that all of the selected organizations do tell the stories on how they are trying to minimise their carbon footprint in their corporate stories. Organisations emit carbon from their operations, thus they have the responsibility to manage it and reduce it and help in achieving the reduction target set by the government.

Having emissions data reported, this story could be one strategy used by organisations to show that they are responsible companies that are aware of and concerned with their activities' impacts on the environment; especially for companies that operate in a high emission industry like DRAX Group, Royal Dutch Shell, BHP Billiton, SSE, and BP Plc. As for these companies, reporting the numbers that show them as among the main emitters in the environment would trigger stakeholders expectation that companies might have done or need to do something to minimise it. Thus disclosing emission reduction initiatives would help protect and restore companies' image and reputation (Renukappa, Akintoye, Egbu, and Goulding, 2013). In SSE story, Martin Pibworth, SSE's Managing Director, Wholesale stated that:

> *"As one of the UK's largest generators of electricity we are responsible for a large amount of carbon emissions. We have a duty to make sure our carbon impacts are properly disclosed and reduced - our shareholders, customers and employees expect nothing less". (SSE Plc, Website*[24]*)*

In their corporate story, BT and BHP Billiton Plc, for instance, tell the audience that their efforts towards managing climate change and emissions are not new, and started a long time ago. They have included the time frame 'journey' and evolution of their climate change and carbon reporting in their story. As stated by BT Group Plc:

> *"It's a natural next step as we've been measuring and managing our carbon for more than 20 years."*

[24] http://sse.com/newsandviews/allarticles/2015/11/cleaning-up-our-act/

There are two ways in which companies are showing their responsibility regarding their activities' impact on the environment. The first one is by showing their awareness around climate change and that companies have a role to play in mitigating them since they also contribute to it. For example, Shell Plc reported that:

> *"We recognise the significance of climate change, along with the role energy plays in helping people achieve and maintain a good quality of life. A key role for society – and for Shell – is to find ways to provide much more energy with less carbon dioxide…" (Shell Plc*[25]*)*

In the above quotation, Shell Plc recognise that they have a role in finding a way of providing less carbon energy to the society. Similarly, BHP Plc report as follows:

> *"As a major producer and consumer of fossil fuels and energy that is focused on sustainable development, reducing GHG emissions and improving energy efficiency are a priority for us…We are committed to being responsible stewards of the natural resources we develop and use in our operations and seek to minimise our environmental impact." (BHP Plc, Climate change report, 2015)*

The above statements illustrate that at least there are four missions that BHP Plc want to achieve in this area; which are reducing carbon emission, improve energy efficiency, being responsible for the natural resources and minimise their environmental impact from their operation.

Besides showing their awareness and recognising their role in mitigating climate change impact, some of the companies are also trying to show their commitment through their support towards government action and initiatives regarding this matter. In BHP Billiton Plc climate change report, the company mentioned that;

> *"As a leading global resources company, we also have a broader role to play in supporting this transition, including the development of low-emissions technology, and sharing our market experience to support governments in delivering the changes in policy and regulation required to successfully address climate change." (BHP Billiton Plc, Climate Change Portfolio Analysis, 2015)*

[25] http://www.shell.com/sustainability/environment/climate-change.html

Likewise, Shell Plc also showing their support by mentioning that:

> *"We welcome the efforts made by governments to cooperatively reach the global climate agreement and support long-term climate goals that balance environmental pressures with development opportunities.*" (Shell Plc, website[26])

After showing that companies are aware of what's going on in the environment and what their role is; the next step or the second way of proving that the companies are responsible is through the efforts they take to minimise their impact through emission reduction. The data shows that 8 of the 12 sample companies have shown their commitment through setting a reduction target. This reduction target not only acts as the company's commitment to their stakeholders; but also acts as the benchmark for their own achievement. For example, Martin Pibworth, SSE's Managing Director, Wholesale, said:

> *"We set ourselves a challenging target to half the carbon intensity of electricity we generate between 2006 and 2020. This result reflects the billions that we have invested in renewable generation and the infrastructure that supports it." (SSE Plc, Website[27])*

SSE have set the target to reduce their emission by 50%, and they aim to achieve it by their investment in renewable technology. On the other hand, for companies that do not have a target like BP Plc, the story is used to justify why they do not do so. In BP story;

> *"A company's GHG emissions can be influenced by a variety of factors that may result from shifts in business activity, production or assets. This makes it difficult to establish an appropriate GHG target that can be cascaded throughout the organization with the objective of achieving cost-effective emission reductions. For these reasons, BP – like some of our peers – does not set enterprise-wide GHG targets and instead requires performance management at a local level through our operating management system". (BP Plc, 2015)*

Despite the company's excuse, these internal factors mentioned are common to all companies and they did not prevent others from setting a target to show their commitment and align with their strategies. The above mentioned changes would not occur every year; so the company could provide an attainable short term target rather

[26] http://www.shell.com/sustainability/environment/climate-change.html
[27] http://sse.com/newsandviews/allarticles/2015/11/cleaning-up-our-act/

than the long term and revise it from time to time. Comparing BP with other organizations in the same industry such as BHP Plc and SSE Plc; despite being exposed to the same factors as BP, they manage to set a reduction target for their emissions.

To achieve the emissions target, the analysis of companies' stories, shows that there are many ways to minimise their emissions; based on the nature of their business. The following sections discuss the example of the emissions reductions initiatives taken by the sample companies.

6.2.3.1 Emissions Reductions Efforts through Technology and Alternative Energy

For energy providers like Shell Plc, SSE Plc, DRAX Plc and BHP Billiton, finding alternative ways of producing energy has great potential as a way of reducing their emissions. This is because the traditional use of fossil fuels for energy generation contributes significantly to CO_2 emissions. According to DRAX Plc's report (2015), "coal is a fossil fuel and damaging to our environment. But it still provides around 25% of UK electricity…" Consequently, the company suggests that new sources of electricity are needed, ones that do not cause climate change. On the other hand, they claim that "building new power stations can be a long and costly process." Alternatively, the company suggests that for more development of renewable energy, because it can be done quickly without taking all the existing power stations off the grid. Besides DRAX Plc, Shell Plc is among those who has ventured into this. The company reported that:

> *"Shell is one of the largest producers of biofuels in the world through our joint venture Raízen in Brazil...We are..developing advanced biofuels that convert plant waste into low-carbon fuels. These advanced biofuels could have lower CO2 emissions than the biofuels available today…In 2015, Shell's first CCS project…scheduled to start operating in Alberta, Canada…will capture up to 1 million tonnes of CO2 a year and store it underground."*

The above quotation illustrates that one of the initiatives taken by energy providers like Shell, is to provide low carbon energy through their investment in biofuels. In addition to that, they are also investing in carbon capture and storage (CCS) projects; which help reduce the emissions of carbon to the air. Other than using alternative energy and CCS, some companies like Shell Plc and BHP Billiton Plc have invested a lot of money

in research and development and technologies that could help to reduce their emissions. For instance, the following quotation from BHP Plc Climate Change report demonstrates the effort of the companies made through investment in technology.

> *"We have invested over US$400 million in research, development and deployment of low-emissions technologies (LET) since 2007. We now focus on technologies that have the potential to lead to material emissions reductions in our operations and supply chains, align with the Company's skills and expertise, but are currently not available at commercial scale or acceptable cost. This includes carbon capture and storage (CCS), technologies to reduce fugitive emissions from coal and petroleum operations, battery storage, high-efficiency/low-emissions (HELE) power generation and transportation." (BHP Plc, Climate Change Portfolio Analysis 2015)*

The above quotation illustrates that the company's investment in research and development in low emissions technology; covering areas such as CCS, fugitive emissions and efficient power generation.

6.2.3.2 Products' Emissions Reduction

Another emission reduction strategy is through products. Reducing emissions through products helps customers to minimise their emissions and footprint. This is an ingenious strategy because it helps to strengthen the companies' brands and reputation in the eyes of its customers. According to The Nielsen Global Survey on Corporate Social Responsibility on more than 29,000 Internet respondents in 58 countries; the finding shows that fifty percent of global consumers are willing to pay more for goods and services from companies that have implemented programs to give back to society. This study is consistent with the survey results conducted by BBMG, GlobeScan and SustainAbility, which found that consumers are rethinking consumption with sustainability in mind. In addition, the result of The Futures Company research found that 50% of the respondents acknowledge that climate change is a global problem and around 60% of them say it is important to them to live a more environmentally conscious lifestyle. This has encouraged Unilever Plc to reduce the GHG footprint of their brands and communicate it to them to let them aware. As a result, the company is taking initiatives to design innovative products; which reduce GHG impacts and inspiring consumers to live more sustainably[28]. This is hoped to be one way that they can connect better with their consumers.

[28]https://www.unilever.com/sustainable-living/the-sustainable-living-plan/reducing-environmental-impact/greenhouse-gases/

TUI Travel launched its new sustainability strategy called 'Better Holidays, Better World' in September 2015. This strategy was built around three core pillars with the pledge to cut the carbon intensity of its airline, cruise and ground operations by a further 10% and deliver 10 million 'greener and fairer' holidays per year by 2020. The story on this strategy was communicated in their website through a video[29], explaining steps that they will take in order to achieve their objectives.

6.2.3.3 Internal emissions through Day-to- Day Activities

On the other hand, some companies like BT Group Plc also tackle their internal emissions such as being energy efficient and cutting travel emissions as a means to reduce their overall company's emission.

> *"We're tackling our emissions on a number of fronts, such as: finding new ways to reduce energy use in our networks and equipment, controlling the energy use in our offices, using more renewable energy and, looking at fuel use in our fleet and cutting down on business travel"*. (BT Group Plc, Website)

In realising these initiatives especially the reduction of office and administrative energy usage; an appropriate awareness and knowledge need to be disseminated between employees. The reduction strategies to be applied and its goals need to be well understood by those involved. Within the company, support and employee engagement is vital in order to realise the organisation's goals. As for BT, they have launched energy engagement campaigned, aiming everyone to take lead in reducing energy in whatever that they are doing[30].

Rachel Mountain, from Environmental Leader wrote that in order for these objectives to be successful, organization needs to create the 'buy-in' feeling among their staff; which is the feeling of agreement, support and engagement with the management decision. As a result, it is vital to involve the employees from the very beginning of the process, such as outlining the climate change or reduction objectives. Making staff feel part of decision making and choose which emission reduction projects that they can contribute to would increase the likelihood that employees will feel connected with

[29] http://www.tuigroup.com/en-en/media/press-releases/2015/20150928-better-holidays-better-world

[30] BT Plc (n.d) Improving our operation. Retrieved at http://www.btplc.com/ Purposefulbusiness/ Energyandenvironment/ Improvingouroperations/index.htm. Access on 3 February 2016

the project and its progress. In achieving the above objective, a clear story of what company wants to do and how they would do it need to be clearly communicated to the employees. Rachel Mountain[31] suggested that:

> *" .. if you want to instigate real change throughout the organization, everyone needs to understand the goals and what behavioral changes are required to make significant reductions in carbon emissions."*

However, changing strategies or plans into action is not easy. In engaging staff, organisations need to shape staff's thinking based on their experience, make them believe that the organisation is doing the right thing; before they can be expected to share the visions and take action together with the organisation. As suggested by Marzec (2007 p. 34), in order "for the corporate story to come to life in the organization, employees must believe the company is headed in the right direction, believe the end state is obtainable, see the story reinforced in their everyday experience and have a personal stake in its success." Marzec (2007) also mentioned that the staff's day to day experience includes what they read and see about the company in terms of its strategy, action and decision.

6.2.3.4 Emission Reductions through Supply Chain

Organizations' efforts to reduce emissions are not limited to action within the organisation but can also involve their supply chain and customers. If not much can be done within the organisation, because of the nature of the operations, at least a company is then showing that they advise others. In other words, if they cannot do much, then they will help others to do it. BT Plc, in their Net Good Program, highlights 20 ways in which they seek to help customers to reduce emissions. To compensate for their own emissions, they have targeted promoting advice to customers' on how to reduce emissions by up to three times as much as their own emissions.

> *"Carbon emissions from our operations represent 5% of our end-to-end carbon impact. Our supply chain accounts for 71% and the products and services our customers used accounted for 24%..... We will help our customers reduce carbon emissions by at least 3 times the end-to-end carbon impact of our business."*

[31] Mountain, R. (2010). Employee Engagement and Climate Change. Retrieved at http://www.environmentalleader.com/2010/09/21/employee-engagement-and-climate-change/. Access on 28 May 2016

The story relating to efforts to reduce emissions does not stop at the supply chain level. The stories also extend to what companies have done to help reduce community's emissions. Besides showing they are responsible, caring and sensitive of what is happening beyond their business boundary, it also acts as a means of justifying to their stakeholders the action that they took. M&S, through their Blog, Carmel McQuaid, its Head of Sustainable Business, Plan A has written a story of being awake at night thinking about people in poor countries such as Kenya still burning biomass and coal to fire their stove; and cause premature death due to illness caused by the black carbon and methane emitted by inefficient stove combustion. This story is expanded by including what they have done in helping this situation such as starting the UNICEF's first carbon offset project by providing funds for 40,000 fuel efficient, low pollution cook stoves to be manufactured, sold and maintained by local entrepreneurs in Bangladesh. The impact of their action; cleaner cook stoves will reduce the number of children dying from indoor air pollution, reduce the time that girls spend sourcing fuel so they are more free to go to school, reduce deforestation and each stove saves tonnes of CO2e emissions per year[32].

This story helps the organisation to make sense of why they did what they did, by giving justification to their behaviour or action (Spear and Roper, 2013). According to Maclean, Harvey and Chia (2012, p. 20), stories are primary devices within life story narrative that help an individual make sense of change. In the above scenario, the story makes sense of why the company provides funds for the manufacturing of fuel efficient, low pollution stoves.

These stories relating to the four most commonly employed strategies taken by companies to reduce their emissions. However, the outcome may not necessarily turn out to be as intended. Setting an attainable and foreseeable reduction target is very important. This is because it will create stakeholders' expectation and the failure of reaching the set target would leave stakeholders with frustration and reduce their trust on company' capabilities. In Diageo Plc case for example, in a report in The Guardian (2015), the company was criticised for not achieving seven out of eight 2008 commitments that should be achieved by 2015. In terms of carbon emission, the company reduced its emissions by 33.3 %, but they failed to achieve their 50% target.

[32] http://corporate.marksandspencer.com/blog/stories/cooking-up-solutions-to-climate-change

Commenting on this issue, Marilyn Croser, director of the CORE Coalition (a civil society network) stated[33] that:

> *"With results such as Diageo's, it's no wonder consumers and the public are mistrustful of corporate commitments. There have been so many false dawns in the sustainability space…"*

The above quotation thus posits that when a global company fails to meet the set l goals; customers and public trust on company's commitment are eroded. According to Dowling (2006), the second role played by a story in establishing trust is to defend or explain a company's actions. Therefore, in this case, the company responded to this criticism by explaining that the target set is a stretch target, taking into consideration the 'science-based' elements in the target. The company commented that:

> *"We could all set targets that are readily achieved but what we've tried to do is look at the science and the wider context, such as where climate change is heading."* (*David Croft, global sustainability director at Diageo, The Guardian, 2015*[34])

The emission reduction target is considered as 'science-based' if "they are in line with the level of decarbonisation required to keep global temperature increase below 2 degrees Celsius compared to pre-industrial temperatures, as described in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC AR5)" (Science Based Target, 2016). The 2 degree Celsius is the limit for world temperature to rise in order to avoid dangerous atmospheric concentrations of greenhouse gases as suggested by IPCC.

6.2.4 Influencing Stakeholders' Impression and inspiring actions: Stories of Achievement

Kaye and Jacobson (1999) suggest that the most valuable stories told in organizations are those that "teach, inspire, motivate, and add meaning; which are created from personal experience in the past, from ideas and questions concerning the present, and from a personal vision about the future" (p. 3). Further, they suggest that success

[33] http://www.theguardian.com/sustainable-business/2015/sep/03/diageo-results-drinks-multinational-sustainability-targets-corporate-commitments

[34] http://www.theguardian.com/sustainable-business/2015/sep/03/diageo-results-drinks-multinational-sustainability-targets-corporate-commitments

stories are important elements of such valuable stories. However, they argue that the most important aspect of these stories is not the success itself, but the utility behind the success, such as the strategy and leadership towards achieving that success. Stories of success and achievement can inspire employees and motivate them to work hard to achieve further success. Therefore, as mentioned in Chapter 3, stories of success, or of exemplary actions, serve as an inspiration when they are re-told (Sandercock, 2003). Ultimately, a company may establish itself as a 'hero company' in emission disclosure based on demonstrations of their achievements and record in reporting (Dowling, 2006, p. 86).

In climate change and carbon reporting scenario, stories of commitments and effort are not complete without the story of progress and achievement. The success story is a proof that the action was really carried out and implemented. Another proof of successful action is through external recognition, collaboration and awards received. Even though the plan is not completely achieved, at least organizations shows that they are moving in the right direction. For example, M&S accompany their reduction commitments story with its progress; whether it was achieved or on going. In addition, they also include the reasons why the plan has not been achieved or been cancelled. The following discussions cover some of the common achievement stories disclosed by the sample companies.

6.2.4.1 Achievement of Reduction Emissions Target

Demonstrating that emissions were reduced is an achievement. Therefore, the story of success includes by how much an organisation's emissions have been reduced and whether the companies have achieved their reduction target. This achievement story is important to prove that the company's reduction strategies are effective and that the target was set based on a reasonable basis and based on their capability. It will be more meaningful if the story is accompanied by an explanation of which efforts have contributed to the achievement of key targets. All of the selected companies, except for BP, Shell and DRAX have set their reduction target. SSE, in their story mentioned that they have successfully reduced 34% of its overall total emissions and this is the result of the change in their energy generation mix to renewable energy and renewable technologies. BHP Billiton stated that they have set a challenging target of reducing absolute emissions rather than intensity and that their emission reduction of 1.7 million tonnes this year is in line with their reduction target. Similarly, TUI group claimed that their emissions are reducing from year to year; and TUI airlines were ahead in their

attempts to achieve the 2015 target of 9% carbon emission reduction in 2013/14 financial year.

6.2.4.2 Collaboration with other companies and institutions

The story of achievement in relation to climate change might also be reflected in the form of collaboration with other companies or institutions in finding ways to improve their impact on the environment. Collaboration can create good impressions in two ways: first, collaboration shows that organizations have gained trust from others to collaborate with them; and that trust may come from a good reputation and image (perhaps built up in areas other than reporting); impressive strategic planning; as well as company's proven capability. Second, if the company collaborates with other well-known companies and high reputation organisations, this may enhance the company's own reputation too and help to show that the company is serious about doing what they say they want to do. According to Dangelico and Pontrandolfo (2015), resources from both collaborative organisations can be exploited to achieve more effective knowledge and capabilities that finally lead to better environmental and financial performance. They add that collaboration also fosters innovation in terms of new technology and new green products. (Philibert, 2004) suggest that new technology takes time to be developed and require the new policy development. Thus, a collaboration between companies or countries can quicken the process as well as stimulate technology transfer (Philibert, 2004).The collaboration may be done through research and development initiatives, developing policies, as well as handling programs together. For example, BP Plc under their Energy Sustainability Challenge (ESC) has funded a consortium of experts from leading universities to examine the complex relationships between natural resources and the supply and use of energy. To date, 15 universities from around the world have partnered with the ESC including Cambridge in the UK; Harvard, MIT, Princeton and Yale in the US; and Augsburg in Germany. One of the achievements of this program is the development of The Foreseer™, a tool used to help inform decisions about managing natural resources by identifying and quantifying the connections among water, land and energy, from source to end use. This tool was applied to Abu Dhabi and China in 2014[35].

[35] http://www.bp.com/en/global/corporate/sustainability/the-energy-future/energy-and-natural-resources.html

6.2.4.3 Achievement through Awards and Recognition from Others

One of the important achievements of the organisations is through the recognition from CDP previously known as Carbon Disclosure Project. Reporting to the CDP is voluntary and every year CDP will give points to the companies' disclosure and rank them based on the scoring. CDP have two types of ranking indexes: Climate Performance Leaders Index (CPLI) and Climate Disclosure Leadership Index (CDLI). According to CDP report (2015), The CPLI score assesses the level of action, as reported by the company, on climate change mitigation, adaptation and transparency. Its intent is to highlight positive climate action as demonstrated by a company's CDP response. A high performance score signals that a company is measuring, verifying and managing its carbon footprint, for example by setting and meeting carbon reduction targets and implementing programs to reduce emissions in both its direct operations and supply chain. On the other hand, the CDLI score assesses the completeness and quality of a company's response. Its purpose is to provide a summary of the extent to which companies have answered CDP's questions in a structured format. A high disclosure score signals that a company provided comprehensive information about the measurement and management of its carbon footprint, its climate change strategy and risk management processes and outcomes.

As a result, being in the CDLI or CPLI lists shows that the company has a strategic plan to mitigate climate change and have implemented their strategies accordingly. As reported by Unilever in their CDP performance story, good disclosure and performance scores are used by investors as a proxy of good climate change management as those in the index are the best performers from more than 2000 companies that report to CDP from all over the world. Therefore in this sample, companies like BT Plc, Unilever, TUI Group and Diageo Plc are recognised by the CDP for their good performance and disclosure, thus distinct themselves from their peers. The story of Unilever mentioned that:

> *"Unilever and its fellow A-Listers were applauded for their abilities to yield win–win results for the environment and business, apply a business lens to climate change, employ long-term strategies to help cut greenhouse gases worldwide and raise the bar on investment to reduce carbon emissions."*

The impact of the CDP index in creating the good impression for the listed company would be even better if the company has been on the list for many years. Jane Ashton, Director of Sustainability, TUI Group, in their story commented that:

"To be featured for the eighth year on the index is a testament to the ongoing commitment to sustainability across the business and the leadership team. As the world's largest tourism business we recognise our responsibility to lead and influence change for a more sustainable future for tourism. We are committed as a business to reducing our carbon emissions and understand the importance of accurate and transparent carbon reporting to all our stakeholders."

Other than CDP, other performance indices, membership or recognition are also meaningful for the organisations to prove their climate change commitment. One of the examples is Carbon Clear ranking. With the primary aim of understanding the extent and quality of carbon management reporting amongst the top 100 UK listed companies, Carbon Clear judge companies based on more than 60 criteria across four areas of measurement, reporting and verification; strategy, carbon reduction and engagement. Even though the criteria are evolving each year, they suggest that the criteria are always tightened and the changes reflect real practice rather than just a box ticking exercise. For the last five years they have done this; the overall results ranked M&S in the first place, followed by BT at the second place. In 2014, M&S and BT shared the first rank but in the following year (2015), BT beats M&S to be at the first rank. In BT story on this achievement; they mentioned that:

"We're number 1 for carbon reporting…[36] *For its 'rigorous and far reaching carbon strategy', BT scored a total of 94%, beating M&S by a percentage point. BT and M&S were once again clear leaders with almost 10 percentage points separating them from their nearest rivals. The report finds that both BT and M&S continue to make plans beyond their stated targets, setting them apart from other FTSE 100 companies. BT was also acknowledged as the only FTSE 100 company disclosing a science-based approach towards setting greenhouse gas (GHG) reduction targets."*[37]

Being in their top 20 ranking reflect that the companies are having a good carbon management, thus give a good impression and create high expectations from their stakeholders. Those who are having a good rank in the related indices are the best benchmark for other companies in the same industry to follow.

A study by Klassen and McLaughlin (1996) found that environmental awards have resulted in positive changes in market valuation as they denote public recognition of

[36] http://www.btplc.com/Betterfuture/Stories/Energyenvironment/number1/index.htm
[37] http://home.bt.com/news/bt-life/bt-awarded-first-place-in-ftse-100-carbon-reporting-performance-report-for-second-year-running-11364006851849

companies' efforts and commitments. The story of awards and recognition would very much interest stakeholders with climate change in mind. That is also one of the elements of how the public can compare a company's environmental performance with others; and how companies distinguish themselves and stand out from the crowd. Another important advantage of receiving an award is the reputational benefits that a company will get as usually award winning ceremony receives a wide coverage from media. One award related to climate change is the Carbon Trust Standard award. This award is in recognition of outstanding performance in managing resource use and greenhouse gas emissions reduction done by companies. These annual awards recognise the top performers amongst all the organisations certified by the Carbon Trust over the previous 12 months (Carbon Trust, 2015).

> *"We are continually impressed with the dedication and progress made by all the organisations that we certify…this year's awards recognise some really exceptional performance from businesses who are demonstrating how much positive change can be achieved when sustainability is embedded throughout an organisation…" (Darran Messem, Managing Director of Certification at the Carbon Trust)*

In 2014, M&S receive a triple award of certification for achievements in carbon, water and waste reduction from the Carbon Trust. This makes them the first retailer to receive such award. Commenting on this award, Tom Delay, Chief Executive of the Carbon Trust[38], said:

> *"M&S has a well-deserved reputation as a leading business when it comes to sustainability. By achieving independent certification the Carbon Trust Standard for each of carbon, water and waste then M&S is able to demonstrate year-on-year progress in achieving its Plan A's goals."*

The above comments suggest that the awards received do contribute to the reputation and act as a proof for their successful strategy. Unilever Plc, for example, provide a long list of the awards, including Gold Medal for International Corporate Achievement in Sustainable Development, received from the World Environment Center in 2013 ; and currently, their CEO Paul Polman, was awarded the UN's highest environmental accolade - Champion of the Earth Award; for leading the business world towards a new model of sustainable growth[39]. In another example, TUI Group Plc, especially

[38] http://corporate.marksandspencer.com/media/press-releases/2014/mands-becomes-first-retailer-to-receive-carbon-trust-triple-award

[39] https://www.unilever.com/news/awards-and-recognition/

through its TUI Travel has received multiple awards for the technology they applied in their traveling; both for their airlines and cruise:

> *"TUIfly was named 'most climate-efficient airline in the world with 1 million passengers' for the second year in a row in the 2014 atmosfair Airline Index, and Thomson Airways won 'best aviation programme for carbon reduction' at the 2014 World Responsible Tourism Awards." (TUI Group, Sustainability Report, 2015)*

> *"Hapag-Lloyd Cruises' newly-built MS EUROPA 2 is equipped with a catalyst that reduces nitrogen oxide emissions by almost 95% and partially filters soot. It was the first cruise ship to be awarded Energy Efficiency Design Index (EEDI) certification by Germanischer Lloyd." (TUI Group, Sustainability Report, 2015)*

The above awards received by TUI Group demonstrate that their achievement is not only recognised by certain bodies; but also by its passengers. Receiving good feedback from customers can provide free marketing for the company that may benefit its image and reputation. According to Cheung and Thadani (2012, pg. 462), consumers perceive the word of mouth as more trustworthy and persuasive than traditional media, such as print ads, personal selling, and radio and TV advertising; thus it is a powerful tool to sell companies' brand.

Good stories persuade and inspire action (Baker and Boyle, 2009; Barker and Gower, 2010; Gill, 2011) in line with company's value (Gill, 2011). Commenting on the achievements that the company has achieved in 2015, Faye Bennette-Hart, the UBM Plc group sustainability manager stated that:

> *"We are very proud of the achievements UBM has made over the last 5 years in carbon management across its global office portfolio. A large number of our staff are very passionate about making improvements in this area, and we have shown that passion can be turned into success. The opportunity is now to start replicating this across our portfolio of global events."*[40]

In 2015, the company has achieved a 15% emission reduction, exceeding their reduction target of 10% to be achieved in 2016. In addition to that, their new office in London has received LEED platinum certification for saving almost 50% in energy and 98% of waste recycling.

[40] Media.ubm.com/news?item=136872

6.3 APPARATUS OF STORYTELLING: MAKING STORIES INTERESTING AND DIFFERENT

All of the selected companies are not working alone in their climate change initiatives. Their strategies involve internal and external stakeholders including employees and customers; as well as the community. In engaging with them to achieve their objectives, first the companies need to make them understand their vision, as well as explain why it is important to maintain the sustainability of the planet. Some people do not realise that their small activities might contribute to carbon emissions and have environmental impacts. Individuals might not realise that watching television and holiday travel contribute to emissions. The corporate emissions may be rather more obvious as compared to individual day to day activities. Communicating the impact of an individual customer or employee activity is not easy as environmental impacts are not straight forward. Therefore, an effective story with attractive elements, presented in an easily understandable way is vital, so that the message is clearly and successfully disseminated.

There are many ways that a company can tell their stories. Different tools or apparatus used by companies through different communication media may be targeted to a different group of audience. As stated earlier, BT Plc, BP Plc, Unilever and TUI Group incorporate videos in their storytelling to deliver their intended message. The use of reporting media such as websites complement the formal narrative reports such as the annual report and the sustainability report. Such media can support presentation elements that are not possible in the formal, often printed and structured, narrative reports. More informal language may be used in voluntary reporting sources such as websites and blogs and there will be scope for interactive and link based communication. More pictures and drawings are also included in the online stories. These features offer more freedom in the choice of language and presentation modes.

According to Buchanan and Dawson (2007), stories are not merely descriptive but may incorporate cues, insights, symbols, analogy and metaphors. Two commonly used linguistic elements found in the companies' stories are metaphor and analogy. Metaphor was defined as the use of one or more words of poetic linguistic expression, outside of its normal conventional meaning to express a similar concept (Lakoff, 1993). The similar concept used in metaphors to introduce new things to the audience can create understanding and invoke creative thinking and social acceptance (Cornelissen, Holt and Zundel, 2011).

Metaphors are used by organisations in many ways. For instance, Casakin (2007) mentioned that metaphors have important implications for design practice and creativity in design problem solving. A study by Seidel and O'Mahony (2014) in production innovation shows how metaphors are used to represent desired product attributes. Metaphors and analogy are also used by the organisation in framing and legitimising the organisational strategic change. One of the examples of a company using a metaphor is the word 'carbon footprint' used to replace the carbon or greenhouse words in companies' stories. According to Malamateneous (2014 p. 39):

> *"Carbon footprint is a metaphor used to describe an estimation of the harmful impact of an entity (country, industrial or social grouping or an organisation) on global warming, caused by that entity's anthropogenic greenhouse gas emissions. As with any footprint, the carbon footprint contains information, which may be used to describe, characterise and identify the entity to which it belongs."*

In terms of climate change and the environment, 'footprint' here refers to the impact of one's activity towards the environment, especially in term of how much carbon being emitted. Another metaphor used is the word 'green', such as green product, green technology or green holiday (as used by TUI Travel). The term green here does not refer to the green colour but symbolically represent the 'environmental friendly' products and so on.

Besides metaphor, it was found that analogies are also used by the companies in their stories. Analogy, as defined by Merriam-webster dictionary is "a comparison of two things based on their being alike in some way"[41]. For instance, the video from NASA – Earth Has a Fever - that was included in the Unilever Plc (discussed above) use the analogy of a human having a fever to explain climate change is damaging the planet. In addition, the video compares the similarity of human fever symptoms with the climate change symptoms for easy understanding.

In addition to the above, slogans are also being utilised by the sample companies to get people's attention and make it memorable. The names that the companies give to their climate change strategy provides a good example. M&S come up with its 'Plan A' strategy; BT Plc has 'Net Good' program; and TUI Group has 'Better Holidays, Better

[41] http://www.merriam-webster.com/dictionary/analogy

World' strategy. In addition, SSE Plc introduces 'SSE's Responsible House' to explain its core strategy with its nine elements in the house.

Another cue employed by one of the companies is the use of 'heroic icons'. As stated earlier, employees should share the organisation's vision and mission and engage themselves in working together with their organisations to achieve it. The question is; how it should be done? Munish Datta, Head of Facilities Management & Plan A, M&S in answering the question from Carbon Trust of how they engage their staff in achieving their Plan A's goals stated that:

> *"……We use a variety of methods to engage colleagues into applying Plan A…. We make relatively dry subjects such as energy and water efficiency more interesting by telling the story using cartoon characters like Captain Energy…"*

The quotation above explains that M&S have used heroic icons like Captain Energy to inspire employees to dub this icon and being active in managing energy consumption and in looking for energy savings. According to Aloia (2006), the heroic icon has been used a source of tremendous motivation and influence; and could serve as a role model for the young or even symbols of national pride. Commenting on the various means of communication applied by their organisation, Kate Neale, Energy Programme Coordinator, M&S commented:

> *"Long gone are the days when communicating meant a general announcement on Monday morning, then sticking a sheet of A4 on the company's notice board. People are visual and, in this digital age, we are all used to a content-rich environment where we consume a lot of media, often simultaneously: seeing, reading, viewing, surfing. Therefore, to get a message across, successful communications need to seize every available medium of opportunity to share information, engage the imagination and make a connection…this means… using graphics and icons in a multitude of different formats: from presentations to posters, displays to desk-drops, web banners to booklets, emails to in-house magazines."* [42]

From the above statement, it can be seen that corporate communications need to be delivered creatively by incorporating the technology and following the current trends of mass media. In corporate storytelling, narrative works well with the existence of graphics, pictures, icons and sounds to make the story more interesting and attractive.

[42] http://corporate.marksandspencer.com/blog/stories/making-energy-matter

In addition, the story should be able to connect with the audiences' imagination and experience, so it becomes acceptable and memorable.

6.4 CONCLUSION

There are various motivations behind the telling of corporate stories. This can include attempts to engage employees, customers, suppliers and other stakeholders to take note of the organisations' initiatives and to identify with the company. "Story gathering, sharing, making, and telling are powerful tools for helping organisations increase internal and external understanding of their values, products, services and culture" (McLellan, 2006). Reporting stories of effort and commitment; as well as achievements such as recognition and awards help companies to build, maintain or even improve and restore their reputation. As suggested by Boje (1991) and Norlyk, Lundholt and Hansen (2013), corporate storytelling does not follow a traditional narratology definition of a story and they are not presented in chronological order.

Exploring twelve companies' climate change and carbon storytelling reveals that the common stories told in climate change and carbon disclosures are the stories around how emission figures are captured and calculated; stories that raise the audience's awareness of climate change, stories explaining what companies have done and are planning to do to mitigate emissions and reduce their carbon footprint; as well as the story of companies' achievement in this area.

In telling these stories, it was found that other linguistic elements were incorporated in companies' story, such as metaphors, analogies and slogans. All of these elements play a role in making the companies' story more attractive and effective.

FTSE350 companies, having well-known brands and often operating in high environmental impact industries, are exposed to scrutiny by regulators, government and publics. Good stories may be helpful to regain and rebuild a company's reputation especially if the company has been involved in scandals (not limited to environmental scandals only) such as BHP Billiton and Shell. Shell, for example, have been taken to court in Nigeria over their oils spills; have been investigated for corrupt investment practices in relation to Nigeria's oil reserves; and recently have been criticised by Greenpeace for its reckless attempts to drill for oil in the Alaskan Arctic. According to Zorka Milin of Global Witness, there have been repeated cases where oil companies deal in secrecy to hide risks from investors and the wider public, whether that's to do

with corruption, global oil reserves or Arctic drilling[43]. Therefore, in dealing with image conflict, there should be more good stories to outweigh the bad stories so that the bad impact can be reduced.

A good story not only delivers the intended message, but can also lead to the creation of new or extended stories by other parties. When people are retelling a good story, it provides free advertising and publicity to the corporate brand and reputation. However, with increasingly fast and available technology where stories can be easily shared and occasionally 'go viral', companies are at more risk as they can easily lose control of the story and the message.

In communicating their corporate story, it was found that organisations incorporate various media and presentation tools in delivering their narratives. It was also evidenced that the use of different linguistic elements like metaphors and slogan, animation and videos is helping to create interesting, imaginative, memorable and easily understood corporate stories. "[Storytelling] told with a particular purpose in mind, which allude to a company's history and role in the market, told by the right person to the proper audience, and that contain an inspiring emotional appeal are far more likely to impact corporate culture and employee behaviour" (Marshall and Adamic, 2010 p.18). In the following chapter, the discussion will cover the analysis of the motivations behind climate change and carbon reporting, issues faced as well as the implementation approach used by the organizations in capturing data and making carbon disclosure.

[43] https://www.globalwitness.org/press-releases/global-witness-briefing-oil-sector-secrecy-scandal-goes-beyond-exxon-and-beyond-climate-change/

CHAPTER 7: MANAGING EMISSIONS AND MAINTAINING COMPLIANCE: STORIES BEHIND THE STORIES

7.1 INTRODUCTION

This chapter seeks to address research question 3 (RQ3), which is to explores the process of reporting carbon by investigating the motivations, challenges and implementation approach used by organizations in disclosing carbon emission. Apart from regulation, this chapter seeks to uncover other drivers that motivate organizations to release their carbon emission information publicly. The chapter also investigates the work behind the scenes of carbon reporting and compliance. This includes how the sample companies implement their carbon reporting and emission reduction strategies, as well as identification and discussion of some of the issues and challenges faced when implementing these strategies. The chapter also includes valuable recommendations to policy makers that might assist then in improving the regulation.

In order to fulfil the above aim, data was collected through interviews with representatives from organizations and government agencies. The interviewees consist of thirteen FTSE companies, two consultants, and two government agencies. The thirteen organizations come from FTSE350 and to maintain the anonymity of the respondents, they are labelled as Company A to Company M. Meanwhile, the four other organizations include government agencies and consultants that are directly and indirectly involved in the implementation of mandatory carbon reporting. The details of the interview participants were reported in the research method chapter (Chapter 4).

7.2 SUSTAINING REPUTATION: THE DRIVERS FOR REPORTING CLIMATE CHANGE AND CARBON STORIES

Reporting climate change and carbon disclosure involve many steps such as deciding on what type of emissions are to be disclosed, the source of emissions to be included and excluded, and how data will be captured and calculated. In addition to these considerations, this type of disclosure is also costly (Crawford and Williams, 2010; Chithambo, 2013). The cost of producing carbon information is related to the updating of companies' management system so that it is capable of capturing related GHG data (Chithambo, 2013). The other cost of disclosing the carbon data (especially voluntarily)

is that their bias towards positive or favourable information may be scrutinised; and unfavourable information may impact reputation. Therefore, this type of reporting is deemed to be a sensitive area for many companies.

Despite reporting costs and required management system changes; the findings in Chapter 5 shows that companies still choose to report. This is especially notable during the absence of mandatory requirements. In the mandatory year, statutory requirements are evidenced to be one of the drivers of the increase in carbon reporting but the drivers are not only limited to legal requirements. The research findings show that the drivers that motivate carbon reporting (both voluntary and mandatory) can be categorised into internal, external and statutory drivers. This is consistent with the statement made by Company L's Director of Sustainability:

> *"We are driven by the combination of statutory drivers, external drivers and internal drivers..." (Director of Sustainability, Company L)*

The statutory requirements include the CRC requirements, as well as the newly introduced MCRR. Meanwhile, external drivers include stakeholder pressure, peer pressure and a desire to protect or improve company reputation. In addition to this, some companies feel that the invitation for voluntary disclosure from CDP is irresistible. On the other hand, the internal drivers include the awareness and commitment from top management and employees, as well as gaining economic benefits through cost savings. The following section will discuss these drivers in detail.

Companies' motivation to fulfil both internal and external stakeholders' expectation, for example, would deliver a message that companies are committed in maintaining a good image and reputation in the eyes of their stakeholders. As storytelling concept suggest (refer to Chapter 3), companies will communicate the story of their behaviours, processes, or relationships (Berry, 2001) that occurred retrospectively, in the present time and prospectively in order to influence their audience' perception and behaviour towards the organization.

7.2.1 Statutory Drivers

Acknowledging the negative impacts brought by climate change, the UK government has introduced MCRR as a central plank of policy in climate change mitigation and management approach. As stated earlier in Chapter 1, the introduction of MCRR by

the UK government has been aimed at providing transparency of companies' emissions to stakeholders and the government. In an extension to that, organizations may also demonstrate how they manage their emissions through their reduction initiatives (CGI, 2013). During the announcement of MCRR, Caroline Spelman, the former UK Secretary of State for DEFRA stated that:

> *"Mandatory reporting of GHG emissions by all quoted companies will provide transparency enabling investors to see how listed companies are managing their carbon liabilities. This is essential information for investors who wish to assess medium to long-term risks. Business groups have called for regulation to create a common standard on GHG reporting and a level playing field and to create transparency for investors and wider stakeholders." (Caroline Spelman, as quoted in CGI, 2013*[44]*).*

As mentioned in the above statement, besides transparency, stakeholders can also use this information to assess organizations' long term risks. Through compliance, organization shows that they adhere to the values, norms, or institutional requirements and regulation (Oliver, 1991; Hooghiemstra, 2000; Criado-Jiménez, et al., 2008). Therefore, compliance with regulation is vital for companies as failure to do so would impact upon their image and reputation. In addition to that, non-compliance would also expose organizations to criticism. This explains why some of these organizations are so keen to demonstrate compliance with regulations. As commented by Company C:

> *"..if you are FTSE100, or top 30 company like we are, and you don't comply, clearly it is an area of question from your investors, clients and other stakeholders to what's you are doing. It makes it easier to comply, or better to comply and have no questions raise around you than if you are [seen] not to comply." (Company C)*

According to Sullivan and Gouldson (2012 p. 66), investors tend to focus most of their attention on listed companies because they have the ability to exert meaningful influence on them. Therefore, for some companies like C, F and G, when it is a rule, then they have to do it. They are not willing to compromise on this. Responding to the question of what motivates them to fulfil MCRR requirements, Company C, F and K mentioned that:

[44] https://www.cgi-group.co.uk/sites/default/files/files_uk/white-papers/wp_mandatory_reporting _of_ghg_emissions_sept_2013.pdf

"Reason number one is regulatory compliance, because we are UK public listed company, that obviously important.." (Company C).

"It's a mandatory requirement so company should do it." (Company F)

"Obviously because it is part of the legislation. As a responsible company, we definitely want to do that." (Company K)

Similarly, Company G emphasises that as one of the top companies in FTSE, it is imperative for them to comply:

"It is a UK law and we are the top 10 or top 5 company in FTSE listed companies. We have to comply with the law. It's a mandate in the company. Comply with regulation is rule no. 1." (Company G)

The findings from Chapter 5 suggests that MCRR has encouraged more companies to disclose their emissions data in their annual report. This is a good change brought by MCRR in the area of carbon reporting. The changes are more significant for those companies that reported carbon information for the first time when MCRR was introduced. Company A for example, stated that:

"We started to collect our emissions data since 2008, but 2013 is the first year we report in annual report, as required by legislation." (Environmental engineer, Company A –interview).

According to this company, they started their data collection in 2008 and have been reporting their emissions data since 2009 through CDP and their sustainability report. The introduction of MCRR is a reason the organization publishes their carbon reporting publicly through their annual report.

Compliance with a new regulation such as MCRR not only increased transparency and created a good image of organizations but also encouraged organizations which are new in this area of disclosure to start taking action and disclose. According to Carbon Clear report:

"This demonstrates the positive impact that compliance can have on those companies who have yet to engage with climate change and carbon reporting; they are forced to take action." (Carbon Clear, 2014, pg. 10)

Before the introduction of MCRR, some companies have to make carbon disclosure under The CRC Energy Efficiency Scheme (also referred to as the 'CRC scheme' or

'CRC') if they fulfilled the reporting criteria. Therefore, for certain companies like Company L, their reporting started with their compliance with CRC. Introduced in 2009, CRC is a mandatory carbon emission reporting and pricing scheme to cover large public and private sector organisations in the UK (excluding state funded schools in England from April 2013), that use more than 6,000MWh per year of electricity and have at least one half-hourly meter settled on the half-hourly electricity market[45].

7.2.2 External Drivers

Two external drivers identified from respondents views are discussed in this section. They consist of a motivation to please stakeholders by fulfilling their demands and expectations but also seem to involve a means to influence stakeholders' perceptions of the company and safeguard their reputation in stakeholders' eyes. Even though both elements are discussed separately, they are not mutually exclusive.

7.2.2.1 Pleasing and Fulfilling Stakeholders' Expectations

The rising awareness of climate change among stakeholders has contributed to institutional pressures, particularly on carbon-intensive industries (Talbot and Boirol, 2015). Stakeholders are key to an organisation's reputation and continued success. According to Greenwood (2001 p. 31-32), stakeholders are those "who are vital to the survival and success of the organisation" and those "who can affect and are affected by the organisation". As such, organisations will try to fulfil the expectations and demand from their stakeholders in order to survive, as well as minimise the risk of giving bad impressions to the stakeholders.

From the interviews, it is clear that the predominant stakeholders include government, investors, clients, lobby groups and the public. Most of the interviewees admit that their carbon reporting (especially voluntarily) is mostly driven by stakeholders' interest and expectations. Fulfilling stakeholders' expectation is a way for organizations to please their stakeholders and demonstrate their adherence to expected norms. According to Dowling (2006 p. 86), corporate stories that resonate with stakeholders' interests and expectations are likely to influence stakeholders to reaffirm and reinforce their belief in companies.

[45] http://www.carbontrust.com/resources/guides/carbon-footprinting-and-reporting/crc-carbon-reduction-commitment

Company C, E and F, report their main motivation to start disclosing carbon emissions as being driven by their stakeholders' interest. As climate change could impact the world in general and individual companies; stakeholders are interested to know what are the risks and opportunities brought by climate change. In addition, as GHG emissions contribute to climate change, stakeholders also want to know how companies would manage and reduce their emissions and mitigate climate change impact. As commented by Company C;

> *"We had a growing interest from our clients. So other big companies who we work with were interested to know our climate change related performance such as GHG emissions, energy usage and efficiency, emission and reduction activity." Company C.*

For Company K, customers are seen as a priority. The Company K's effort to manage their emissions and disclose it is a way of showing that they acknowledge the impact of climate change, are committed to mitigating their emissions as well as to help their customers to have a better life with their product. As the company is involved in property development, one of their carbon reduction measures is through the development of low carbon property for their customers. In addition, they want to set a good example for others, especially in the same industry to be inspired in doing the same thing. The company stated that:

> *"We agree quite fundamentally on the risk of climate change and issues around carbon emissions. We set the reduction target as part of our core responsibility of the large company like ours, and helping customers as well. Our motivation is to help our customer get 'better home and better lives' and be an example company of what we do." (Company K)*

Beside clients, emissions related information has also become of interest to other stakeholders such as investors. As for Company F, even though they have collected their emission data since 2000 they started reporting it in 2003, in line with the raising interest from their stakeholders. The representative stated that:

> *"In 2003, there is an increasing interest from stakeholders, investors, employees and public, asking how are we doing at this point." (Company F)*

This increasing demand that resulted from increasing awareness among the stakeholders is also agreed by third parties other than the organizations such as from Agency W's senior auditor:

"The public and stakeholders seem to become more aware and interested in what company is doing to be more socially responsible and environmentally responsible. Our clients started to express their worry in this matter because they do not want to give bad impressions to their stakeholders. Then they started to include the information about their activities' impact on the environment and social community in the annual report." (Senior auditor, Agency W)

According to this senior auditor, disclosing carbon information as part of environmental disclosure would reflect that the organization is socially responsible and thus give a good impression to stakeholders. This is also a good first step for an organization to please its stakeholders and at the same time manage their reputation. Reporting emissions shows that companies are being transparent on the impact of their activities.

"It is our interest to state what we are doing to our investors..." (Company D).

The importance of the emissions information to the stakeholders especially investors is also expressed by Caroline Spelman, Secretary of State for the Environment (2013[46]) while commenting on the introduction of MCRR.

"Investors are now looking hard at the green credentials of businesses, and the reporting of greenhouse gas emissions will give them vital information as they decide where to invest their money." (Caroline Spelman, Secretary of State for the Environment, 2013)

On the other hand, there are conflicting views on the usefulness of carbon reporting in investors' decision to invest. The quote from Company C and G seems to suggest that there is a need to comply, but as long as a company does this then there is only limited interest from stakeholders. The Company C's Sustainability Manager suggest that:

"It's never going to be their biggest factor in deciding whether to make an investment or not making an investment with the company. I think it's just another one of the number of factors. I haven't come across any one client or one investor of ours who will refuse to work with us if we had a really awful climate change performance or we didn't comply." (Company C)

The same view is shared by Company G. For this company, they perceived that the climate change and emission issue is not a priority to their stakeholders when they are assessing their company.

[46] https://www.gov.uk/government/news/leading-businesses-to-disclose-greenhouse-gas-emissions

"I don't think it is at the top of people radar when they are reviewing this company. We have done materiality analysis of what is important to our stakeholders, and the top things that important to our stakeholders is that we produce products that are accessible to our clients around the world, regardless of their economic state. That's the number one issues in SRI[47] *for this company". (Company G)*

Despite these findings, I believe this is not always be the case. It's difficult to gauge the impact because of the fact that these three companies do comply with regulation and have generally reasonable performance in this area which gives a good comfort feeling and positive impact against them. As stated by Company's C Sustainability Manager:

"….having complied with the MCRR and we participate in CDP, investors can tick that box without making any questions and move on to other areas that they think may carry higher risks like the supply chain… people assume you got reasonable activities in place because you are complying." (Company C)

Her statement above shows that people have put some trust in the companies who comply with MCRR and participate in CDP. CDP requires detailed disclosure from companies; including their assessment of risks and opportunities, as well as their action in minimising their emissions. Meanwhile, MCRR requires companies to disclose basic information regarding carbon emissions. The combination of this reporting is perceived as powerful enough to convince the investors that the companies have done enough in this area. Thus fewer questions may be asked of these companies as the investors are satisfied with what they have done. For example, Company E commented that:

"Another driver for us is investments. Some investments grant insists on environmental performance. For the FTSE companies, they want to see whether we manage and report our GHG."

The requirement for the environmental performance that includes carbon emissions is not only considered in investment grant decision, but in bank loan decisions and other business opportunities such as government tender. The Agency W's senior auditor commented that:

[47] Socially Responsible Investment

"Government tender may require companies to include sustainability segment. They want the job to be done sustainably: low emissions, good source, no deforestation, etc. If the company does not have that, they won't be in. It is not just for the government contract; but also for some of the loan contract too such as the loan for public transport." (Senior Auditor, Agency W)

As for Company E, since their operation involves public transport, thus reporting and showing a good performance in this area is vital especially in securing the funds for their company.

Another motivation to report is initiated through the invitation from CDP (formerly known as Carbon Disclosure Project). CDP targeted their invitation to participate to the companies under FTSE350. According to Paul Dickinson (Executive Chairman, CDP) investors use CDP data to help guide their investment decisions in order to protect themselves against the risks associated with climate change and resource scarcity; as well as making profit from those companies that are well positioned to succeed in a low-carbon economy (CDP, 2015). Therefore, before the introduction of MCRR, reporting to CDP helps increase companies transparency and reputation to their existing and potential investors. As a result, as part of FTSE 350 companies; a company like Company D perceived that it is important to them to join the league:

"The other motivation is the invitation from CDP to report. CDP then provide that information to investors. As for a Plc, our interest is to provide clarity to investors what we are doing. They target FTSE350 companies. So we are FTSE 250 companies. We have done that since 2008." (Company D).

This is also agreed by Carbon Clear representative. According to him, reporting to CDP means companies are reporting to investors' base. Starting to report carbon voluntarily through CDP, Company A has its own reasons why it thinks participating in CDP reporting is good for the company. As stated by Company A:

"….I believe that we joined CDP due to the vision of the former Environmental Manager who was always alert to the new trends and climate change. Back then (and even now) CDP is probably one of the only companies that has a methodology to introduce climate change concepts in a company like risks and opportunities, management, emissions inventory and so on…CDP highlights the main concerns and issues related to climate change, which eventually helps guiding companies on what to do." (Company A)

Besides showing that they are alert to the changes around climate change, CDP open up their views on what climate change means in terms of risks and opportunities; as well as the management of carbon emissions. The CDP questionnaires help trigger them to think and plan what to do in mitigating climate change and its associated risks. According to a Carbon Clear representative, even though CDP is voluntary, organizations are pressured to participate for these reasons:

> *"CDP was set up to respond to the demand from a significant investor base who felt they require that information, therefore, there is pressure on organizations to response to the request from the investor base, to satisfy the requirement from the financial base community and investor community. It is not a good position for organization to sit there and actively ignore the request from investors… Secondly, CDP certainly will disclose the list of organizations who are unwilling to be open about their emissions." (Agency Y- interview)*

The Carbon Clear representative, in his statement above highlights that mandatory reporting through CDP is driven by two factors: one is the pressure to satisfy the request and expectation from investor community; and another is to secure their reputation from being disclosed as amongst those who are refuse to disclose.

7.2.2.2 Safeguarding Stakeholder Trust and Maintaining Reputation

Guarding companies' reputation is vital for the survival of a corporation, as well as in gaining competitive advantages. According to Fombrun and Van Riel (1997, p. 10) "reputations constitute subjective collective assessments of the trustworthiness and reliability of firms". Thus they act as a strategic asset that "produce tangible benefits: premium prices for products, lower costs for capital and labour, improved loyalty from employees, greater latitude in decision making, and a cushion of goodwill when crises hit" (Fombrun, 1996, p. 57). According to the discussions in Chapter 3, an effective style of corporate storytelling that incorporate corporate mission, morality, action, strategy, behaviours, process and relationship (Marzec, 2007; Berry, 2001;Dowling, 2006; Gill, 2014) may influence audience decision making, behaviour and improve perceptions of the organization (Schultz et al, 2002; Gill, 2014).

To maintain this strategic asset of stakeholder perception and firm reputation, Company G reports its carbon information to demonstrate their capability and set an example to others. Responding to the question of what motivates them to disclose carbon emissions, the representatives highlight the reputation agenda by saying that:

"To support our company reputation. At the moment there are companies who sort of recognised us as a leader of sustainability. Our company is not yet recognised as a leader of sustainability [formally], but I think we are doing a lot of activities that moving us toward that space; which enhances our company reputation." (Company G)

Being recognised as one of the leaders in this area could boost a company's reputation. Similar to Company G, Company I view carbon reporting as a medium to show their leadership ability and be one of the first companies that reported on this area and show that they are a responsible company. In addition to that, they have to protect their reputation as a top 20 FTSE company and the company who was once awarded as the 'Responsible Business of the Year'.

By being transparent about the impact of the business activity, and disclosing how companies are dealing with it is an implicit indication that the company is aware of their business impact to the environment and that they are concerned about it and being responsible for what they are doing. This is true for Company G, as its Sustainability Manager were saying that:

"We have what we called company's value and transparency. We had public commitment around environmental impact….We use carbon reporting to show to our stakeholders and community how we operate. To show them that we care about stuff. To support our company reputation."(Company G).

As discussed in Chapters 3 and 6, raising awareness, understanding and appreciation of the organization is a basic element of building trust. Dowling (2006) suggests that corporate stories which explain the company's behaviour in terms of its mission and morality can create emotional bonds with stakeholders and foster their trusts and support of the company's efforts and actions.

For certain companies that have been disclosing carbon information voluntarily; compliance with regulation is not just as a continuance of the existing efforts; but a way for companies to maintain their good reputation. As commented by Company F:

"Part of the reason [for compliance] is because we have been reporting anyway….So far we are doing quite well to show to the investors that we are socially responsible, so we want to defend that." (Company F)

From the above quotation, it is obvious that compliance with regulation is a means used by companies to maintain and defend their good reputation by demonstrating good

morality, behaviour, action and strategy through their story (as suggested by the framework in Chapter 3). Continuous reporting is not only about showing consistency, commitment and fulfilling stakeholder' expectations; but also about wanting to show the improvement achieved by the companies. Company D thus suggest that:

> *"In mandatory reporting, I think everybody that report what to show the best figures. If you didn't show these figures, then obviously it shows that you have no initiatives to reduce your energy. Once you start showing figures you don't want a negative going forward, you want to show the improvement." (Company D)*

This may, at least in part, explain why (as reported in Chapter 5) many companies provided comparative data in the first mandatory year, even though it is not required. As discussed in Chapter 6, demonstrations of the companies' ability to improve emissions and achievement of reduction targets form part of the 'achievement story' that could influence stakeholders' perceptions and provoke action within the company. In addition, it may also help to explain why emission reduction efforts are a common story theme found in the carbon reporting as reported in Chapter 6. The good reputation in the eyes of the stakeholders is not limited to demonstrating how responsible they are; but also to show their capability in doing things. For example, Company E's Group Property & Environment Director stated that:

> *"Financially people can see what we have invested in capturing the emission data and see the impact of our business in terms of Scope 1 and Scope 2 emissions. AR is viewed worldwide so we can get feedback from stakeholders." (Company E)*

The view from Company E was supported by the view from Company C representative, by saying that:

> *"…..the report is increasing our ability to demonstrate our environmental performance to our clients and investors. That's a big one." (Company C)*

The above two quotations evidence that carbon disclosure in annual reports is used as a medium for the companies to demonstrate their goods behaviour, action and strategy in order to influence stakeholders' perception as proposed in the framework in Chapter 3. In addition to that, reporting carbon emission demonstrates that the company is effective in tracking and reporting carbon emissions. The comments from Company E's representative also suggest that reporting carbon information through

annual report (especially mandatorily) give the opportunity to the companies to reach more audience geographically, as annual report is accessed and viewed globally. As a result, companies can promote their good (or bad) deeds and get feedback from wider scopes of stakeholders.

7.2.3 Internal Drivers

The corporate story is not only crafted for external audiences, but also for internal communication and motivation. Annual reports are used by multiple users and can be accessed worldwide. Similarly, information available through websites and blogs is broadly available to both external and internal stakeholders. Gill (2014) suggests that the corporate story has potential to "motivate and inspire employees about their organization and sustain corporate identity" which at the end contributes to strengthening their internal loyalty and reputation (p. 5). In addition, it is suggested that companies that can engage employees to their mission and effort could motivate the right action from employees (Marzec, 2007). For Company F, reporting and managing emissions is a good thing that they should do in order to better manage the climate change impact. In addition, as the company is involved in education, their employees' concern with regard to climate change is high and they are passionate to get involved in managing it together with their organisation. Increasing awareness among employees is a good development in an organization as this would lead to better employee engagement in climate change activities initiated by their organization.

> *"A lot of employees are passionate about teaching, education, so they are quite passionate to get involved [in carbon reporting] and it's a noble thing to do – helping making decision based on collected information and manage the impact better." (Company F)*

As discussed in Chapter 6, one of the stories told by the companies through their carbon disclosure is about what they have done to reduce their emissions. Hopefully, the efforts made by the companies is not just for the sake of telling the nice story and impressing the readers; but with the noble intention to reduce the harm and impact that their operations have caused to the environment. As commented by the UK Deputy Minister, 2012:

"British companies need to reduce their harmful emissions for the benefit of the planet, but many back our plans because being energy efficient makes good business sense too. It saves companies money on energy bills, improves their reputation with customers and helps them manage their long-term costs too."
Nick Clegg, Deputy Prime Minister, 2012

Knowing and managing their emissions through energy reduction and energy efficiency benefits the companies economically. Besides being able to tell a story of efforts and commitments; reducing emissions may also lead to the reduction in costs by reducing the energy usage or being energy efficient. As suggested by Nick Clegg above, being energy efficient not only saves companies cost for short term and long term, but also improves their reputation with customers.

Disclosing emissions based on scopes or based on sources or business division helps companies to identify the main factors that contribute to their emissions. By knowing this, management can design an appropriate strategy for tackling these issues more efficiently. Talking about the economic benefits, Company G, C, I and F admit that measuring, managing and reporting carbon data does have a financial benefit in terms of cost saving. In addition to that, Company C stated that it is also useful for them to be able to make comparisons between their branches in different countries and further investigate why certain branches' emissions are higher than others. Company C states:

"…by saving energy and water, I think we benefit more internally. We saved a couple of hundred million pounds which would have been spent on energy and that money could be invested elsewhere, something which is more worthwhile." (Company G)

Likely, Company F commented that:

"Collecting the data we can reduce our carbon footprint and save you money. It would be the best combination." (Company F)

Even though for some companies, reporting emissions has led to reductions in energy usage and so cost savings; it is not the case for Company B and Company H where they do not view that carbon reporting lead to direct financial benefits. On the other hand, they agree that it helps them aware of carbon implication of their business.

7.3 MAINTAINING COMPLIANCE AND REPUTATION: IMPLEMENTATION APPROACH AND ISSUES

This section investigates the work underlying the construction of the story or narrative around company carbon performance. This section includes a discussion of how companies implement their carbon reporting which are in compliance with regulation and at the same time comparable to others. In addition, the section also includes the issues and challenges faced by companies in capturing, measuring and reporting their carbon emissions data.

Implementation of carbon reporting is not easy and would be costly especially when companies do not have their own expertise in-house. Despite the challenges and the complexity faced by the company, in reporting; most of the companies are still doing it. The efforts taken by the companies in implementing it sending a message that companies are trying their best in order to comply and fulfil stakeholders' expectation; thus fulfilling the storytelling concept of delivering corporate message through companies' action.

7.3.1 Constructing the carbon story: Implementing Carbon Reporting

MCRR was a completely new piece of legislation in the UK. During 2015, when the interviews were conducted, some companies were preparing for their second year of mandatory reporting following MCRR; while the others had just published their first year mandatory report. Complying with the new statutory requirements may have been relatively easy for some organizations, but others needed expert advice from more experienced parties on MCRR and its associated guidelines.

Interviews carried out with company representatives, auditors and consultants show that in implementing their carbon reporting, companies have used one of three alternatives: 1) doing everything in-house using their own expertise and benchmarking it with others; 2) working with consultants, or 3) outsourcing reporting to a third party.

7.3.1.1 Implementation using in-house expertise

Implementing carbon reporting involves many processes in capturing, measuring, consolidating and reviewing data before it can be reported. In capturing and measuring emission data, companies may do it manually or through certain systems such as

smart meters. Company D for example, claimed that they have used smart meters covering about 90% of their properties. The remaining 10% is based on estimation from previous consumption.

> *"At the moment we've got smart meters on 90% of our electric sites; and about 50% of our sites measured gas on the smart meters. Those that without smart meter are based on estimated bills from previous data." (Utility manager, Company D)*

Because MCRR is relatively new there are many challenges for companies seeking to comply. These challenges will be discussed in detail in the following Section 7.3.2. Some companies might not have the necessary in-house expertise to offer a sufficient understanding of the requirements and how the processes should best be carried out. As mentioned by Company M's Sustainability and Reporting Manager:

> *"What we have now is something that is not only complex [to implement] … but it is also so complex that most companies don't understand it." (Sustainability and Reporting Manager, Company M)*

In addition to the complexity of the requirements, the 'one for all' type of available guidelines may not be really helpful as all companies are different from each other. Comparing between carbon reporting and financial reporting, senior auditor of Agency W argues that:

> *"Unlike financial reporting, there are no recognised accounting principles that can be followed. Every company is different, and there is no one set guideline for particular industry or co, so that's very easy to question on the data of what to include and what not." (Senior auditor, Agency W).*

Even though MCRR is accompanied by guidelines from DEFRA, first time reporting companies need some clues on how data should be presented and reported. The guideline acts something like 'theories' in education where companies need to see examples of 'practical' applications of the theory that might suit their reporting. In dealing with confusions in interpreting the requirements, the findings suggest that some companies engage in benchmarking alongside other companies especially from the same industry. This is because, for some organizations, the reporting process especially the data collection stage is rather complicated. Therefore benchmarking themselves with other companies, especially the more established is very helpful to them.

Benchmarking, as defined by Holloway, Hinton and Mayle (1997 p.1), is “the pursuit by organizations of enhanced performance by learning from the successful practices of others”. According to them, comparisons of key processes which contribute to organizational success can be made through benchmarking. Comparison may be made with other parts of the same organization; competitors; or organizations operating comparable processes in a context which is in some way relevant (Holloway et al, 1997). Besides benchmarking, certain companies may also imitate other companies’ way of reporting. The study by Aerts, Cormier and Magnan (2006) suggest that imitation plays a significant role in corporate environmental reporting where companies in the same industry often appear to imitate others’ reports.

In this study, the finding shows that 12 out of 13 companies interviewed claimed that they have compared themselves to others in terms of carbon reporting and performance. There are many ways of how these companies benchmark themselves with others. One of the benchmarking approaches implemented by respondents is through the CDP performance evaluation. As discussed in Chapter 6, every year CDP will come out with two performance ranking, called performance index and disclosure index. To refresh, the performance score assesses the level of action, as reported by the company, on climate change mitigation, adaptation and transparency. Therefore, a high performance score signals that a company is measuring, verifying and managing its carbon footprint, for example by setting and meeting carbon reduction targets and implementing programs to reduce emissions in both its direct operations and supply chain (CDP, 2015). On the other hand, the disclosure score assesses the completeness and quality of a company’s response. In this context, Company A, D, J, and L using CDP evaluation as a mean to benchmark themselves with others. As stated by Company J:

> *“Probably CDP is the best way we do the benchmarking. They did the comparative analysis for us….” (Company J)*

Through CDP ranking, companies will compare the grades given by CDP from their score with other companies (especially their competitors) from the same industry and sector. In addition to that, some companies like Company D also look at other top CDP companies in other industries.

The second means of benchmarking is by looking at other organizations' reporting, especially those top companies in CDP rank. As mentioned by Company D's Utility Manager:

> *"I went to their websites and look at their environmental policy. However, their businesses are different and they are international operated companies. But I just look to be inspired by their ideas of what we can do*."(Company D)

The companies chosen to be benchmarked may not necessarily come from the same industry. As the above quotation stated, even though the benchmarked companies' operations are so different, looking at their reporting such as their environmental policy can inspire others and give ideas of what else the companies can do. Besides policy, organizations are also comparing their emission figures with other companies' emissions. As commented by Company G:

> *"For us, we look at our competitors' report and see how their [emission] numbers compared to our numbers, because they are in the same sectors." (Company G)*

There are a number of ways companies can get the needed information from competitors or their benchmarking company. Some companies choose to have a direct communication with other companies' representatives and discuss what they have done and what they have found. As admitted by Company D:

> *"It is interesting to talk to someone in that company and find out what they do. This isn't exactly competition when you are looking at reduce energy. You could set yourself a challenge." (Company D)*

The information sharing might also occur during conferences or workshops they have attendees at. According to Company K's Head of Energy and Renewables, some companies are very open about knowledge sharing in this area especially if they are not your competitors.

> *"We speak in conferences and share our knowledge and listen to other people. Some companies (not competitors) are open about knowledge sharing too."(Company K)*

For Company G, their benchmarking is carried out against others in the pharmaceutical sector. According to them, the whole sector gets together once a year to share environmental data, and benchmark against each other. This is good practice as

organizations are helping each other to improve. In addition to the above, knowledge sharing can also occur within the organisation. In Company K, for example, some of their staffs are experienced as they have come from companies that are doing well in this area. These staffs bring with them their experience and knowledge that they share with their current company.

According to Southard and Parente (2007) in an effort to identify the best practice, companies tend to focus on what others do externally and neglect the internal expertise. As for Company F, besides comparing and benchmarking themselves with other individual companies, sector or industry, Company F also compare their emissions performance within the company. Since there are no direct competitors in the UK to benchmark with, Company F makes internal comparisons between their operational buildings in different part of the worlds.

> *"We are comparing per square metres of our different operational building and see how they are doing. So if one is higher or lower, we can interrogate what are they doing and why. By doing that they can help each other by sharing an example of good practice." (Company F)*

The result of the benchmarking is that knowledge sharing by the better operational units helps other units to improve. Similarly, Company C benchmark their individual branch performance in different countries and share what they determine to be good practice especially in terms of energy efficiency and managing carbon emissions.

It does not matter how organizations benchmark themselves. The more important matter is what benefit can be gained from such benchmarking. In terms of CDP ranking, a high disclosure score signals that a company provided comprehensive information about the measurement and management of its carbon footprint, its climate change strategy and risk management processes (CDP, 2015). Companies with high performance scores will be included in Climate Performance Leaders Index (CPLI). Starting in 2015, it is called the A list. Meanwhile, top scores in disclosure are listed in Climate Disclosure Leadership Index (CDLI). Companies like A and D claimed that they have benefited from this ranking:

> *"That benchmark (CDP grades) has helped me to place new processes within the group to increase those grades, like a third party verification, workshops to identify risks and opportunities associated with climate change and so on… During 2015 I've been developing an appropriate climate change strategy for*

the company and I have benchmarked the mitigation figure that we would like to propose" (Company A)

By identifying the top companies in the same industry, organizations can, therefore, plan their own strategy based on these companies as a best practice. In addition, as regard to the CDP ranking, if their score is behind their competitors this could motivate them to do more and perform better to improve their ranking. As commented by Company D:

"We are compared by CDP. We scored a D which is brilliant. Last time we scored an E." (Company D)

In term of carbon reporting and presentation, companies can always adopt other companies reporting by using their own data but borrowing others presentation frameworks. These frameworks are also easy to get as the reports are usually publicly available. In carbon management, one of the important uses of benchmarking is in terms of emission reduction initiatives. Knowing that certain strategies are effective in reducing energy and emissions is an important discovery and if appropriate and practical, a company can apply the same approach to their company. As for Company K, benchmarking with the company that performs better than them give them ideas of what more they can do in addition to the existing one. Therefore, the company is looking for what lessons they can learn and what practices they can apply, from those businesses into their business. This might include the opportunity to innovate or use something available in the market such as the use of alternative energy such as solar power. In doing so, a company is looking for something that can bring competitiveness to their organisation too. According to their Head of Energy and Renewables:

"We are looking for what we can do; or some specific things that we are not yet doing that are unique to our business and bring the uniqueness, innovation and competitiveness to our business as compared to our competitors." (Company K)

Similar action is also taken by Company I. According to them:

"We try to find out what they are doing. For example, they are changing to LED lights and boilers in order to be energy efficient. So did we." (Company I)

Despite the benefits that organization can gain from benchmarking, these organizations have encountered some problems especially in finding the best

organizations to benchmark with. For example, through CDP ranking, even though companies are classified into sectors, these sectors cover a wide range of companies' activities. For example, the 'Consumer Discretionary' industry includes different sectors such as companies from retail, funeral services, media and entertainment, travel and leisure and so on. As a result, companies have to choose companies that have similar operations with their companies to benchmark, rather than randomly choose from the industry categorised by CDP. As commented by Company D:

> *"In comparing to other companies, if I choose an industry in CDP, it is really weird because there is such a big bag of companies in there…So it makes it difficult for us to actually find the target for comparison because we are the second largest of the kind." (Company D)*

As a result Company D have chosen one company that they think is the most comparable to them as that company seems to be the next biggest company in their industry. The difficulty of getting the right comparative companies to benchmark themselves is a common problem to other companies too. For Company A, even though they can find a company with similar production, however, they are different in the diversity of production portfolio. Therefore, the total emissions for a company with one single product might not be compared to the company with a variety of products, even though they are in the same sector.

Every company is unique in their own way, and this is also the factor in which the company retains their competitiveness. However, these differences and uniqueness make the companies difficult to benchmark themselves. As stated by Company C:

> *"It is difficult to benchmark since not many companies in our sector and we are quite unusual factor in the way our business model works, but we do look at our competitors, if they disclose those data." (Company C)*

Companies are only able to benchmark themselves with each other where the information is available. According to Company C, despite their effort to benchmark with their competitors, they claimed that not many of their direct competitors are actually showing what they did. On the other hand, despite the uniqueness of an organization and the difficulties to find a similar organization to compare, benchmarking with the overall sector performance could tell them where they are at the moment as compared to others. As mentioned earlier, company G compare with other companies within the industry through their annual meeting. Similarly, using

British Retail Consortium comparison figures, company M is able to compare themselves to not just individual companies but to the retail sector as a whole. Further, the company mentioned that:

> *"Since companies have its own operational boundaries, thus emissions have never been like for like 100% comparable. However, in terms of overall scale and in terms of direction, we can get that from top companies' comparisons." (Company M)*

Although the company could not have an accurate comparison, the top companies benchmarking help provide an organization with the guideline of what to do. Therefore it can be concluded that the sharing of knowledge can be done through reporting benchmarking, CDP ranking, personal communications or through sharing of experience internally. The next session will discuss the companies and agencies views on the implementation of MCRR together with their suggestions for its improvement.

7.3.1.2 Implementation with the help of Consultants

> *"….even professional users can find law complex, hard to understand and difficult to comply with…"*
>
> *-Richard Heaton First Parliamentary Counsel and Permanent Secretary of the Cabinet Office*

Due to the complexity of understanding and implementing carbon reporting, one of the solutions employed by companies is to consult with experts. According to a senior auditor at Agency W, companies come to them for both consultation and assurance. This service saw increased demand prior to the introduction of MCRR. According to this senior auditor, usually a company that wants to do this is one which is under the spotlight and is most concerned with the potential reputational damage. So most of them are big companies with big names, or they are big manufacturing companies. Besides these companies, the next category is public interest companies or government funded companies. In addition, the other category of clients for this service are those companies that have branded image, that feels the need to be seen as socially and environmentally responsible; even though they are not listed companies. However, he emphasised that large companies are the key markets for them.

In terms of consultation services given to the clients regarding carbon reporting, the senior auditor from Agency W commented that:

"…often they come to get advice on what they have done. For example, they have collected the data, and we perform a review like internal audit advisory type of job where we work alongside and identify the problems in the data collection or internal control structure that may cause the error to follow through." (Senior auditor, Agency W).

In addition to that, in specific relation to MCRR, he added:

"In term of MCRR, we provide them with the insight of what they should and shouldn't be doing; and what other people are doing in their industry." (Senior auditor, Agency W)

From the quotations above, it can be summarised that among the services rendered to the clients include reviewing the clients' data collection, identify the problems, things that need to done, as well as giving information about what other organizations are doing in the same industry. Besides reviewing what companies have done, the senior auditor is also particularly helpful in defining organisational boundaries and reporting criteria.

7.3.1.3 Implementation through outsourcing

In maintaining image and reputation, organizations will ensure that they are fully compliant with regulation. However, compliance itself may not be enough; as the information disclosed must also be reliable and trustworthy. The introduction of MCRR has, in fact, increased the administrative burden on the responsible team. However, some organizations may have a small number of team members; while some others not even have any responsible team for that purpose at all. Through their experience, Agency Y acknowledged that;

"One of our client company for example, only have 20 employees, but they were listed, so they have to comply with MCRR. They do not have sustainability team... There are limited things that they can do." (Agency Y)

For this type of company, outsourcing may be the best solution for them. Not having in-house expertise; they can make use of the external expertise but at the additional cost. As for the above case, the Agency Y representative further commented that:

"They are paying us now purely because they are going through the motion of working out the easiest way for them to comply with legislation. For now, they have extra effort burden, time burden, and incur additional external cost because they do not have capability to do it" (Agency Y)

The above statement emphasises that the reason for outsourcing is because an organization does not have an appropriate internal capability to fulfil the legislation requirement. As for company C, besides helping them to comply, the outsourced company also helps them in other areas like strategy and target setting:

"We work with third party company who used to help us to collect the data from the countries and also process and analyse data on our behalf, to make sure that we comply… we use them to help us create our climate change strategy in general, look at our target with us, to kind of challenge ourselves to make sure that we are being effective with our target setting."

Outsourcing data collection and analysis for carbon reporting under MCRR is common even in FTSE 100; if the in-house team does not have required expertise and knowledge. Further, Company C stated that:

"I think most companies that I know with similar size to us have adopted a similar process because they employ environmental managers but they not sufficiently knowledgeable in this very detail area to work on own kind of thing." (Company C)

For Company J, even though the data collection is being outsourced, data reconciliation with the previous figures is still done to ensure that there is not much deviation between the figures. Any big gap might indicate mistakes in data collection. The reconciliation process can reveal any need for further investigation to be carried out. As stated by Company J:

"We outsource the data collection to other company, then we align with the internal data. Check the annual statements from electricity and gas statements. Ask the sites to reconfirm the figure and reconcile the figures. Easy for us to check because we only have one supplier and we can compare with previous figures as well; because we have done this for many years." Company J

Similar actions to reconcile aggregations of data are undertaken by Company C. When their branch in other countries key in the data into the system and there is a big gap between the current data and the previous data for the same data field, the system will automatically trigger question to make sure that the data entry is correct.

On the other hand, outsourcing brings potential disadvantage to the company. The Company's M Sustainability and Reporting Manager argue that:

> *"I think the question is: if you're not familiar with it how do you find your way around it? I think inevitably what happens is that companies end up outsourcing it. They get a consultant to do it for them but in doing that then they don't really understand the figures that come out as a result. The argument is about how to keep it in so at least companies understand what it is, other than just manage it." (Company's M Sustainability and Reporting Manager)*

Based on his experience working on the WRI, WBCSD and GHG Protocols in the early 2000's this interviewee was one of a small number of business representatives who helped with the drafting of the UK mandatory carbon reporting regulations. This manager believed that companies needed to understand their own data even though the aggregation of data was often carried out by the third party consultants. The importance of data understanding and appreciation are discussed in the following section 7.3.2.

7.3.2 Issues and Challenges in constructing carbon stories

There was not 100% compliance with MCRR in its first year. The investigation of companies' annual report in Chapter 5 confirms this situation. The survey from Carbon Clear 2014 reported similar results. As for the first year, some companies reported that they have limited time from the MCRR announcement to the date of the publishing their annual report. However, they should see that the regulation is coming because it was supposed to be mandated on the April 2013 but delayed until September the same year.

The process of developing and delivering an organisation's message by using narrative (Gill, 2011, 2014; Schultz et al, 2002) around carbon reporting requires considerable effort. There are a lot of people engaged in data collection, identification and data entry work behind the scenes. The analysis found that companies' face some problems and issues in doing this. Of the interview participants, nearly half of them stated that data collection was the main problem within their companies. Problems in data collection may arise because: the companies have multi-national operations, there is no established carbon data collection system in place, it involve a lot of costs, and lack of staff understanding in collecting and keying the data.

7.3.2.1 Issues with multi-national companies

Companies like C, K, M, and E have branches all over the world. MCRR requires companies to report their emissions for all operations including those abroad. When a company is operating internationally, they have to comply with other regulations from other countries too. One problem is that different legislation in different countries requires different reporting. In the case of emissions data, the data used for MCRR might not be used to comply with other requirements in other countries. Thus another type of data collection is needed. Different type of data collection will consume extra costs and human resources. In commenting on this issue, Company C stated that:

> *"I think one of the challenges is that we operate in many different markets and different governments, with different requirements for reporting. So what we were required to report in the UK is always different from what we were required to report in the US or other countries. That's the challenge - lack of international agreement on environmental data reporting." (Company C)*

Besides having different requirements in different countries, Company K also highlights that different countries may have different understanding and definition of what the term 'carbon' means. In addition to that, the company also mentioned that the data collection is time consuming.

> *"...reporting emissions data takes time. We are UK based company but we have operations across Europe and Turkey. So a little bit more complicated in collecting the data from those places. I think the challenge is, different market has a different interpretation of the carbon." (Company K)*

The same situation applies in the case of a large company like Company M where they have operations in 19 countries. Data collection is a big task for them. However, those operations in other countries are small and only contribute around 5% of the total emissions. Despite the high level of time, energy and cost involved in collecting this data, the company is required to do it in order to comply with MCRR. It may be questionable as to whether the work involved is worthwhile compared to its contribution. As stated by their Sustainability and Reporting Manager:

> *"Data collection is a big task and actually quite difficult. We have operations around the UK and other 19 countries. We have lots of little operations that were in other countries and it's hard to capture. When you added it all up it came to less than 5% of carbon emissions. But we still need to do that and I*

think that was a good thing but that was the kind of thing that everybody was trying to avoid." (Company M)

These data collection problems are also recognised by the Agency W representative in their clients' companies. The representative mentioned that if the companies are operating internationally, their operations might be different in each country. Consequently, it is really difficult for the company to get the data on a consistent basis. Often the challenge the company has is that the data collected in the UK is based on certain criteria, but the same criteria are not relevant for their company in other countries like in the Middle East. As a result, the data is reported for the group rather than for every segment of the business. Further, the representative also stated that another problem is around the completeness of the data. It's hard to know whether you already have the complete data set or not. The question raised is:

"When a section report a number, how do you know it captures all the relevant data?" (Senior auditor, Agency W)

In answering this, auditors have to go back to the methodology and processes used by companies, as well as the requirements from legislation.

The existence of various requirements that need to be followed by internationally operating companies has caused the responsible teams to spend significant amounts of time solely on reporting related activities throughout the year. For instance, Company E complains that:

"Due to various legislation requirements, we have various reports that need to be submitted every month of the year since January. It's quite a challenging time." (Company E)

This situation has raised the issue of whether time spent on the reporting brings enough value to companies' stakeholders, and whether the benefits of reporting outweigh the cost of reporting. As commented by Company E:

"The main issues is that most of the committee's time was spent on reporting. We have got so many protocols to work on. The whole thing is about value. What value does it bring to our customers; to our companies and to the environment? If more money and bigger commitment is needed for reporting and compliance, then the benefits have to outweigh the costs of doing it." (Company E)

Sullivan and Gouldson (2012) suggest that in making investment decisions and in managing environment related issues, company managements always think of the value to stakeholders. With the effort and money spent to comply with various regulations, the above quote suggests that companies may need to consider whether benefits to stakeholders are a sufficient justification.

7.3.2.2 Challenges in Data Collection

Not all FTSE350 have an established data collection system in place. Even though some have started to invest in innovation and technology to have a proper online system; some are still searching the most appropriate mechanism for their company. Establishing the data collection system is not easy especially when the company have international operations and/or their operations involved various activities and emit different types of GHG emissions. Without having a proper data collection system in place, the completeness and accuracy of data are hard to achieve.

According to the representative from Company D, it has taken a lot of work in the past 7 to 8 years before they can be in a comfortable position to report. On the other hand, even with the established system that they have now, it still does not feel easy for them. As a retail company with a lot of properties, to collect the information is difficult for a start. Therefore, initially the company have to invest a lot of money in smart meters to be able to do that. In addition to that, there is also a lot of work in consolidating with their suppliers. This is because, when Company D took over the business, most of the 40 branches had different suppliers for gas and electricity. To make it worse, the companies that they took over have never measured and reported their emissions before.

According to Company D, it can be concluded that a proper carbon management system takes time to develop, involves a lot of cost such as in installing smart meters and need a lot of hard work. As stated by Company D, despite this, even after 7 or 8 years they still feel that calculating and managing carbon is difficult. If it is difficult for an established company; it could be even more difficult and complicated for those companies which have just started to do it with the introduction of MCRR. Company D commented that:

"When I talk to a lot of companies when they come to procurement or energy reduction service, or even Carbon Trust and ESOS assessors; they will say to me that I am way ahead of most companies of our type for what we are doing. If I am way ahead and I still feel like I have a long way to go; then it means there is still a lot of problems there that people need to address." (Company D)

The above quotation demonstrates that the process of reporting carbon information is quite complex, even for those who has been reporting for some time.

7.3.2.3 Issues related to data collection and Maintenance Cost

Investing in a new information system such as data collection and measurement system is costly. As a result, sometimes it is hard for the responsible company to persuade the top management to invest in this area. According to Company D's representative, there is a cost to the company for a start. However, he suggests that the starting cost would be lower if the work has been started beforehand. On the other hand, he argues that companies have priority over the area of which they will spend their money on. Top management wants to see the proof that the company will get a return from their investment before deciding to invest in it. Talking about the cost involved, Company C also agree that even for data collection has cost them a lot of money. Consequently, even though they are operating in 50 countries worldwide, they are currently only reporting for 20 countries that have the largest contributions to their overall revenue. However, when permitted, the company will expand their reporting coverage up to their top 30 countries. As a result of this financial constraint, it would affect the extent of their compliance with MCRR. The Sustainability Manager of Company C mentioned that:

"Even just the data collection, it still cost our budget probably easily around £50,000 a year. We at the moment are reporting with 20 countries out of 50, they are the biggest countries, contributes over 90% of our revenue. However, I quite like in time, to roll out our reporting across at least the top 30 countries. But that is quite expensive. So still a lot of costs connected to compliance". (Company C).

On the other hand, although the cost of collecting the data would reach £50,000 a year; this is rather a small amount for a big company like Company C; which have operations in 50 countries all over the world. This is rather a defensive measure of not including carbon emissions reporting from their operations in a further 30 countries.

In addition to data collection, other cost involvement is in terms of maintenance of the data. As commented by Company D, in some cases, companies have to hire additional employees to look after the reporting and the monitoring of their carbon data. Further, the cost of carbon reporting will be higher if companies utilise the consultation service or outsource it to third parties.

7.3.2.4 Issues regarding maintenance and accuracy of data

Besides smart meters, some companies have invested in online data system to facilitate the branches all over the world to key in data in a centralised system, such as for Company C and F. Despite having centralised data system, it does not ensure 100% accuracy of the data. For Company F, in order to ensure the accuracy of their data, the data entered in the system is attached together with the documentary proof.

Another important issue is that the accuracy of the data is also very much dependent on the responsible person who enters the data into the system. According to Company C, even though they are working with a third party in analysing and reporting their emissions, however, the data are received from other operational countries through their online system. Their problem is related to human mistakes in keying in the data into the system. Company C commented:

> *"The big challenges are, every time when we collect data, one of my colleagues in the country has misinterpreted some data, and keyed in incorrectly into the system. The things that normally happen when people get confused." (Company C)*

The above statement illustrates the importance of understanding carbon and carbon equivalent information, as well as legislative requirements. Since monitoring and data checking is difficult for some companies especially those operating internationally, their emissions data are very much dependent on the staff who provide the data. As stated by Company J, since their emissions occur at different places, the company have no choice but to rely on their sites to provide the company with the data. As commented by Company M,

> *"So that continues to be a challenge because most of the time the number of Kilo Watt or whatever it is we are reporting does not mean anything to people, so they don't know whether it should be 1 million or 1 thousand, and they enter*

it wrongly in the system and we take a while to figure it out. It's always kind of annoying at home. Sadly, data entry is the challenge." Company C

In addition to understanding the emissions data collected and reported by them; the responsible person also needs to understand the importance of it to the company and its stakeholders. The need to know why they need to get as accurate data as possible and how this figure would affect the well-being and reputation of their company. This view is also held by Company E. They are a transportation company, most of whose emissions come from burning fuel. However, in the operation country where the fuel price is cheap, the responsible person for data collection may feel that this figure is less material to them. Thus, there is less urgency to provide an accurate measurement of fuel usage. As commented by Company E:

"One of the challenges is to ensure the consistency in data calculation methodology for each operational geography. For a certain country, where the fuel price is cheap, sometimes the staff cannot see the importance of measuring the usage of it accurately. They need to understand why they are measuring the emissions and why they are producing the report. It's quite challenging". (Company E)

In order for the responsible staff to accurately collect and key in the data, appropriate briefing and training are vital for them. In Company C, data are collected every half year: Even though the company does not publish the half year reporting, it is for management's own awareness and knowledge to make sure that everybody understands what they should be doing. So every 6 months, the management run extensive training webinars for all of the countries that participate so that they can receive reminders of what they have to do. If the management gets anything new that they want the branches to collect the data on, so the management will give them a lot of support. In addition, there is also helpline from their outsourcing company that people can just phone anytime in a different time zone to get help. Even though this helpline is expensive; not many use it because basically they already know what to do. The remaining issue is that some staff are still making genuine errors, or just not appreciating the data they have in front of them and what it means.

Meanwhile, in Company K, they have developed a standard template of reporting for their branches to fill in. It's a manual spreadsheet based template, which then collected by region. Year to year comparison then is carried out in order to look at differences.

In doing so, the teams involved were trained and briefed on what required and the scope of information needed before the data are being collected. However, the problem arises when people change job; so the next person needs to be briefed and trained too.

7.4 SUGGESTIONS TOWARDS A BETTER IMPLEMENTATION OF MANDATORY CARBON REPORTING

As discussed earlier, MCRR is viewed by some companies as an extra burden and is unnecessarily complicated. They also consider there to be overlap and duplication in the requirements of CRC and EU-ETS. Some companies, such as companies C and I suggested that it would be better if there were only one requirement and legislation that covers all objectives such as for transparency, assessing risks, tax calculation and tariff and so on. Company C's sustainability Manager mentioned:

> *"…I think something that would definitely make a huge improvement to everyone's life is if there could be one type of data reporting worldwide."(Company C)*

Company C's Sustainability Manager also criticizes implementation of the MCRR. She suggested that government and DEFRA were not good at collaborating with industry. She commented that government and its agency often claims that consultation and discussion were made with representatives of larger companies to get their view on new regulations or potential new laws to be introduced. However, she suggested that the government does not change their existing views too dramatically in response to private sector concerns. She added:

> *"We gave our feedback and they still do what they want to do." (Sustainability Manager, Company C)*

In the future, if the government considers of introducing a new regulation (especially if it involves SMEs), she suggests that the government would have to be really active in seeking feedback and collaboration with those type of companies before just rolling out a regulation that affects them. This is because from her experience, many of their SMEs supplier companies that service their business, wouldn't even have a clue of what their GHGs are. Talking about their company's experience, she mentioned:

> *"5 years ago, or 10 years ago, big companies like us probably do not have a clue of what GHG is. We've been on the journey of understanding, reporting and everything. Even to do 25% of what we have done over the last 6 years would be quite tough to a small company, or medium company. I think it's a good idea but has to be done in a measured and sensible way." (Sustainability Manager, Company C)*

In the case of MCRR, therefore Company C thinks that monitoring by the government is necessary. By doing this, the government will understand the obstacles and issues faced by the affected companies in complying with the regulation.

Companies M and I suggest that the government needs to simplify the reporting requirements. They also suggest that improvement is also needed on the reporting guidelines. As suggested by Company E, it would be better if the guidelines are prepared by industry rather than just 'one size fits all'. Besides, Company E also suggests that the guidelines need to provide more information on the presentation of the data, such as the reporting example by case studies. In discussing the guidelines, Company C also suggest the government needs to make the guidelines available in advance of the regulation; not after. This would give some ideas for the companies to prepare in advance to comply.

As mentioned in Chapter 1, the Climate Change Act 2008 introduced a legally binding target to reduce greenhouse gas emissions by at least 80% below the 1990 baseline in 2050, with an interim target to reduce emissions by at least 34% in 2020. The Act also introduced 'carbon budgets', which set the trajectory to ensure the targets in the Act are met (DEFRA, 2016). In addition, the Climate Change Committee (CCC) (2015) emphasised that "the changes caused by emissions will have an impact on lives in the UK, as well as the lives of people around the world". In order to help government achieving the carbon budget, as well as avoid some of the worst impacts of climate change; CCC (2015, p. 12) suggests the need for a "strong response to reduce emissions".

To encourage reporting and emission reduction, Company D suggests that the government should put back the money that they are collecting to the system in a more visible way. This interviewee commented:

"The government should put back the money that they are collecting back to the system in a more visible way. I think they were building more coal power stations. That's not really what the money we paid is for. We would not need for so many power stations, if we don't use so much energy or if we go green. The money from the tax should come back to us." (The Utility Manager, Company D)

In the future, when more and more companies are reducing their energy use and become more 'green', the country would not need so many power stations anymore. Instead, the company suggests that the money from the tax should come back to the companies in term of incentives and rewards. The reasons being, some companies probably need more incentives from the government in order to reduce their energy. The company's representative complains:

"Government should reward anyone who can make the difference. I've never seen that positives thing going on. There are Green Days here and there but they are making it less viable for you to do it on your premises." Company D

The same thought was shared by Company I. The company suggests that the government should incentivise companies who meet the agreed targets. This would encourage that particular company and other companies to work harder to reduce emissions and achieve the target sooner.

In mitigating and adapting climate change and encouraging emission reduction, CCA (2015) reported that the government has provided incentives and policies including the introduction of long-term contracts providing a secure return for low-carbon generators; Renewable Heat Incentive for low carbon heating building; grants to reduce the upfront cost of new electric vehicles, and offer discounts on the Climate Change Levy if companies meet energy efficiency targets. Despite all the incentives offered, the interviewees suggested that the government should make it more easily accessible for the companies. According to Company D's Utility Manager, the government has introduced a green energy grant, but he was critical and not convinced that the government is committed to this. His opinion is based on his difficult experience in applying for the funds. Green energy grants were introduced to reduce energy at peak times. He expressed his interest and filled in the initial part of the application form, but has not been able to complete it because questions and requirements from the form are not clear. According to him:

"When it comes to the main submission, I don't even know how to answer/fill in the form. I don't know who would. It feels like they don't really want to give that money away. DECC call me and ask me why I didn't proceed with it. And I say 'your form is not helping'. The government should be more committed by making it simpler and clearer." (Utility Manager, Company D)

This is one example discovered in this study, but there could be many more cases like this. As suggested, the government should make the grant application processes simpler and clearer, so that companies wouldn't get the impressions that the government is actually not really serious about giving out these incentives.

7.5 CONCLUSION

Regulation, stakeholders' interest and expectation, reputation and internal benefits are among the drivers of carbon reporting. Image and reputation appear to be the key drivers of carbon disclosure, regardless of whether the regimen is voluntary or mandatory. As emphasised by Company M:

"The reason we do it and have always done it is around management reputation and innovation" (Company M)

The examples and findings in this chapter have been consistent with the purposes of corporate story telling. As reflected in its definition, which is to 'influence stakeholders' perception towards organization by creating a new point-of-view or reinforces an opinion or behaviour' (Schultz et al, 2002; Gill, 2014). In order to influence stakeholders' perception, companies wanted to look good in the eyes of their stakeholders. Thus reporting carbon emissions would deliver morality, behaviours, processes, relationships, action and strategy (Marzec, 2007; Berry, 2001; Dowling, 2006; Gill, 2014) messages about their organizations' commitment towards a better environment and society. With the introduction of MCRR, compliance with regulation is always seen to be a priority especially for the top FTSE companies in order to maintain their leadership and be seen as exemplars of current practice to others. At the same time, other organizations may be motivated to follow the reporting trend because they don't want to be left behind and so take action in reporting to maintain their reputation and competitiveness.

In reporting carbon information, some organizations are showing that they are ahead of others as they have been reporting voluntarily previously. On the other hand, some

companies which do not have enough expertise in this area, opt for outsourcing or get, at least, some advice from consultants. This enables them to ensure that their organizations are fully compliant with regulation and that the data reported are relatively reliable.

In addition, organizations also benchmark their reporting and carbon performance against other organizations. External benchmarking includes CDP ranking, reviewing other company reports, as well as sharing through direct communication and conferences. Internally, organizations compare the carbon performance between their operational units and share tips with each other to improve.

Comparing practice and performance with others in order to improve is important because at the end, if the companies don't do that, they will still be compared by their stakeholders.

> *"…so it's not so much us looking at our performance against other companies, but it is more of our clients or our investors looking at our performance against other companies." (Company C).*

Consequently, organizations need to ensure that their performance is not so much different with others, especially those from the same industry; or else their reputation may suffer.

Despite the needs for the organization to disclose carbon data and comply with MCRR; there are some issues and obstacles faced by the companies in reporting.

The multiple statutory requirements to be complied with, lack of data understanding, data collection and capturing; and data completeness, create common issues and concerns across reporting companies. As emphasised by Company M, there is complexity around the requirements and not all companies have yet developed adequate understanding. Having international operations exposes companies to different statutory requirements; but also difficulty in data collection. Besides understanding and skills, companies also faced possible errors and mistakes when data is entered in into their systems. This is more common where the responsible individuals have a poor appreciation of the data. Their lack of understanding of the data and its importance may create unsatisfactory feeling where the tasks are carried out as an additional burden.

This chapter provides analysis and suggestions that are based on interviews with the companies studied. Among other things, companies would prefer to have one statutory requirement that fits all purposes so that they can reduce their time and money spent in report production. Since some of the companies especially those from FTSE250 is new in carbon reporting, a clear and simple guideline would be useful to them. Last but not least, the government is making strong efforts towards encouraging emission reduction through various types of incentives and schemes. However, the access to those incentives should be made clearer and easier for the companies to apply. Next chapter presents the overall summary of the thesis, discussion, as well as the limitation and suggestion for future research.

CHAPTER 8: DISCUSSION

8.1 INTRODUCTION

This chapter provides a discussion of the findings from empirical chapters with comparisons to previous literatures. The discussion of the findings is encapsulated in thesis contributions; which are divided into contribution for literatures, theoretical and practical contributions.

8.2 DISCUSSIONS- CONTRIBUTION OF THE STUDY

In this section, a discussion of the research contributions is presented. Based on the overall findings from the three empirical chapters, the study contributes in the following three ways: further understanding of climate change and carbon reporting practice, a theoretical contribution by extending the use of storytelling concept to a significantly different context; and practical contribution for companies and policymakers.

8.2.1 Contribution to the Carbon Reporting Literature

In chapter 2, it was discovered that previous literature in climate change and carbon had covered the area of the determinants for carbon disclosure (Prado-Lorenzo et.al, 2009; Rankin, Windsor and Wahyuni, 2011; Zhang, McNicholas and Birt, 2012; Liao, Luo and Tang, 2014; Peng, Sun and Lio, 2015), emission reduction strategy and costs (Weyant, 1993; Druckman, Bradley, Papathanasopoulou and Jackson, 2008; Weinhofer and Hoffmann, 2010; Swallow and Furniss, 2011; Azlan, Ooi, Mehran et.al, 2012; Ioannou and Xin-Li, 2016), calculation methodology (Wiedmann and Minx, 2008; East, 2008; Pandey et al, 2011; Milne and Grubnic, 2011; Downie and Stubbs, 2012; Dragomir, 2012; Chakraborty and Roy, 2013), pressures and motivations to disclose (Okereke, 2007; Bronn, Vidaver and Cohen, 2009; Reid and Toffel, 2009; Haigh and Shapiro, 2011; Clark and Crawford, 2012; Luo, Lan and Tang, 2012), disclosure patterns (Stanny, 2013), carbon reporting in a university (Towsend and Barret, 2015), carbon reporting quality (Comyns and Figge, 2015) and the market response to climate change and carbon disclosure (Lee, Park and Klassen, 2015). The thesis contributes to the existing carbon and climate literatures by analysing the impact of the MCRR legislation on carbon disclosure; the apparatus of carbon reporting storytelling; and the

dynamic of carbon reporting to sustain reputation. Discussion of these contributions follows in the following sub-sections.

8.2.1.1 The Impact of MCRR on the extent of carbon reporting amongst FTSE350 Companies

An important limitation of the existing studies is that, the absence of a mandatory requirement has meant they necessarily focus largely on the experiences with and information available from voluntary reporting. Many of the researches on disclosure focus on voluntary disclosure through CDP reporting and were carried out in the setting of other than the UK (refer to Table 1.2 in Chapter 1). This thesis extends the literature by addressing this gap. This research focusses on mandatory carbon reporting and on United Kingdom data. By examining the differences in disclosure practices between as the UK moved from a voluntary to a mandatory reporting environment, the study provides insight on the changes as the regime changed and the specific impacts of the introduction of a mandatory requirement for emission disclosures. Further, since the UK is the first country to make carbon disclosure through annual report mandatory to all listed companies; this research could serve as an initial point for future research in this area, in the UK or in other countries.

The findings in Chapter 5 demonstrate the positive impact of MCRR, where the results show an increase in both quantity of company disclosure of carbon information, as well as the quality of the disclosures. Despite the high carbon disclosure in the voluntary year where 95% of companies were making some disclosure; the introduction of MCRR has increased the rate of company disclosure to 100%. The increase in the number of reporting companies is consistent with the finding from Cowan and Deegan (2011), Hollindale (2012) and Choi, Lee and Psaros (2013) when the introduction of new environmental and climate change regulation such as the National Pollutant Inventory (NPI) and National Greenhouse and Energy Reporting Act 2007 (NGER) were similarly seen to increase the number of companies reporting carbon disclosures. It is suggested that the introduction of regulation has also increased public awareness on climate change, thus pressuring companies to disclose (Choi et. al, 2013).

In terms of the quality or content of reporting, the analysis of the disclosure is based on the MCRR requirements in Companies Act and DEFRA guidelines (2009). The finding of this thesis shows that there is a dramatic increase in the score for compliance items reported in the mandatory year as compared to the voluntary year. In the

voluntary year, 52.5% do not disclose any of the mandatory items (score 0 points). On the other hand, this figure has dropped massively to 2.5% in the mandatory year, leaving only 4 companies with total non-compliance. The finding suggests that MCRR was almost universally accepted by the reporting companies. There were no serious compliance problems especially for FTSE350 companies. This finding is in contrast to arguments from prior research suggesting that companies often fail to comply with the mandatory requirements and that the disclosure quality is often low (Adams et al, 1995; Larrinaga et al, 2002; Llena et al, 2007 and Criado-Jimenez et al, 2008).

As for voluntary disclosure items, only a few disclosure items show substantial increases in the mandatory year, while others show very little difference between the two years. The items that show a substantial increase are the disclosure of total emissions, base year emissions, year-to-year comparative emissions, intensity measurement, reporting year, the specification of scopes, reporting boundary and conversion tools disclosure increase massively in the mandatory year. The analysis suggests that one of the reasons for this increment is because some of the items are closely related to the mandatory items. For example, intensity measurement is used when disclosing intensity emissions; thus the increment in intensity emissions has led to the intensity measurement reporting to increase too. This finding is supported by a study from Al-Razeen and Karbhari (2004), which propose that there is a significant, positive correlation between mandatory disclosure and voluntary disclosure related to the mandatory disclosure index[48]. Nonetheless, careful attention needs to be given by the stakeholders because it cannot be concluded that full compliance also means high voluntary disclosure, and in some cases the opposite is true.

Despite this increment, the average scores show that the disclosures of voluntary items are still at the low level for both years. Similar findings were found by Deloitte (2010), where their investigation on FTSE 100 disclosure shows that only a handful of companies in the survey came close to complying with DEFRA guidance. The high level of compliance and the low level of voluntary disclosure suggests that companies put a higher priority in compliance with regulation and less attention to provide as much information as possible as suggested by DEFRA guidelines. This may be due to the extra work and cost associated with voluntary reporting such as collection, processing

[48] Voluntary disclosure related to the mandatory disclosure index are those disclosure used to explain mandatory item further such as the definition and specification of emission scopes. Items in the legal requirements but above the minimum requirement (Al-Razeen and Karbhari, 2004, pg 354)

and production costs; as well as the implicit agreement to provide future voluntary disclosures (Hollindale, 2012)

There was no requirement in the MCRR for companies to commission independent party verification of their data; however, the findings of this study provide evidence that affected companies did make this effort voluntarily. This provides a good sign for the company effort towards proving more reliable, credible and accurate data to the user of their annual reports. The increase in data verification and some other voluntary items supports the suggestion that regulation may act as an impetus for changes in disclosure although not an explicit requirement of that regulation (Cowan and Deegan, 2011, p. 430).

Another important contribution of this study to the carbon literature is that it provides an insight of the different level of disclosure between FTSE100 and FTSE250. The finding suggests that FTSE100 companies perform better in complying with MCRR as the reporting percentage for FTSE100 is higher than FTSE250 for each of the mandatory items. A similar finding is also found for voluntary disclosure items, where FTSE 100 shows a better average score as compared to FTSE250. However, the majority of companies for both FTSEs are at the low level of disclosure for voluntary items. On the other hand, some improvements in the disclosure are evidenced for both FTSEs. Consequently, the findings would confirm previous studies' findings and suggestions that the larger companies are more likely to disclose their emissions (Prado-Lorenzo, 2009; Rankin, Windsor and Wahyuni, 2011; Choi et al, 2013, Chithambo and Tauringana, 2014). This would also suggest that larger companies have more resources to comply and are more exposed to public and government scrutiny, thus encouraging them to disclose (Liu and Anbumozhi, 2009; Rankin et al, 2011, Choi et al, 2013, Chithambo and Tauringana, 2014).

The findings also show a significant difference in compliance levels between industries. For mandatory items, the finding is consistent with suggestions from previous studies (such as Prado-Lorenzo et al., 2009; Rankin et al., 2011; Zhang et al. 2012; Choi et al., 2013, Chithambo and Tauringana, 2014) that highly environmental sensitive industry (HESI) (refer to Chapter 5 section 5.2.3 and 5.3.2) have better disclosure than non-environmental sensitive industry. On the other hand, not all of the HESI scores high points for this category. As for the voluntary disclosure, the result shows that the high scores come from both HESI and non-HESI. For the voluntary

year, the high score industries are construction and material, food and beverages, retail, media and telecommunication. Meanwhile, for the mandatory year, the high scored industries are construction and material, utilities, media, healthcare and personal and household goods. This mixed finding is similar to Choi et al (2013) and Chithambo and Tauringana (2014) studies. For instance, one of the highest disclosure industries found in Choi et al (2013) study is telecommunication, which is a non-HESI.

Finally, it is worth mentioning that the presentation of carbon disclosure has also changed in the mandatory year, where more standardised and systematic presentation tools such as table, diagram and graphs are used, in addition to narrative. It can be concluded that the findings help the researcher to achieve the research objective 1 as outlined in Chapter 1, as to see the impact that MCRR brought to the FTSE 350 carbon disclosure.

8.2.1.2 Apparatus of Carbon and Climate Change Storytelling

Utilising the storytelling concept, this research brings a new look and perspective in looking at companies disclosure, by concentrating on the message delivered through the disclosure, the purpose and the presentation of those disclosures. The review of the literatures (refer to Chapter 1 and 2) found that none of the previous studies were looking at what are the main messages communicated through climate change and carbon disclosure, why and how they are being presented. Previous research that has examined the content of carbon disclosure (see Cowan and Deegan, 2011; Hollindale, 2012; Choi, Lee and Psaros, 2013; Borghei-Ghomi and Leung, 2013, Chithambo and Tauringana, 2014) is more quantitative in nature, where a disclosure index approach is used to test hypothesis proposed in their study.

In this study, the researcher has analysed the developments in and transmission of the organizational message through climate change and carbon reporting; what may be labelled as corporate storytelling (Berry, 2001; Schultz et al, 2002; Bruner, 2003; Marzec, 2007; Gill, 2011, 2014). The message delivered by companies includes elements of morality, behaviour, process, relationships, action and relationship (Marzec, 2007; Berry, 2001; Dowling, 2006; Gill, 2014), which take place retrospectively, in the present and prospectively (Boje, 1991; Dowling, 2006; Marzec, 2007; Gill, 2014). The findings suggest that these messages are used to influence stakeholders' perception and ultimately maintain company reputation in the eyes of their stakeholders (Schultz et al, 2002; Gill, 2014).

The investigation of corporate messages through multiple source media such as the annual report, stand-alone reports, websites and companies' online reporting has discovered four common messages or stories disclosed in climate change and carbon reporting (refer to Chapter 6), which are stories about: 1) the company's emission performance and closely related information, 2) raising public awareness of climate change and its impact, 3) company efforts and commitment to manage and reduce their emissions, and 4) company achievements in relation to the reduction of carbon emissions.

The information found in the stories of the companies' emission performance in the sample companies are similar to the information found in previous literatures under the information on GHG emissions heading (such as Rankin et.al, 2011; Borghei-Ghomi et. al, 2013; Choi et. al, 2013; Chithambo and Tauringana 2014). The disclosure combines both numerical data and narratives, where narratives are used to explain the emission figures in term of the calculation methodology, emission boundary, scopes' definition and so on. This thesis highlights how narrative help the readers in making sense of the emissions numbers and enhance the reliability and credibility of reported emissions data.

The story of company efforts and commitment covers the information on the emissions' reduction efforts implemented by the organizations as well as future reductions' planning mentioned in previous studies' disclosure index (see Borghei-Ghomi et. al, 2013; Choi et. al, 2013; Carbon Clear, 2015). On the other hand, despite looking for the efforts made by the organizations, this thesis also emphasis on the message behind this type of disclosure. This study suggests that the information on the initiatives to reduce emissions would help in establishing stakeholders' trust towards an organization. In this context, trust is established through raising awareness and generating understanding and appreciation of the organization through their effort and commitments (Dowling, 2006).

An interesting finding for corporate storytelling through carbon reporting is that organizations not only try to make the audience see what they have done to mitigate climate change and reduce emissions; but also try to raise awareness and understanding on the issue in their reporting. It was found that organizations express their commitment through knowledge sharing by providing information and educating the audience on what climate change is and how it happen. This information was not discovered in any previous literatures.

The framework proposed in Chapter 3 (see Figure 3.3) has been restructured to incorporate the findings of this climate change storytelling study as follows:

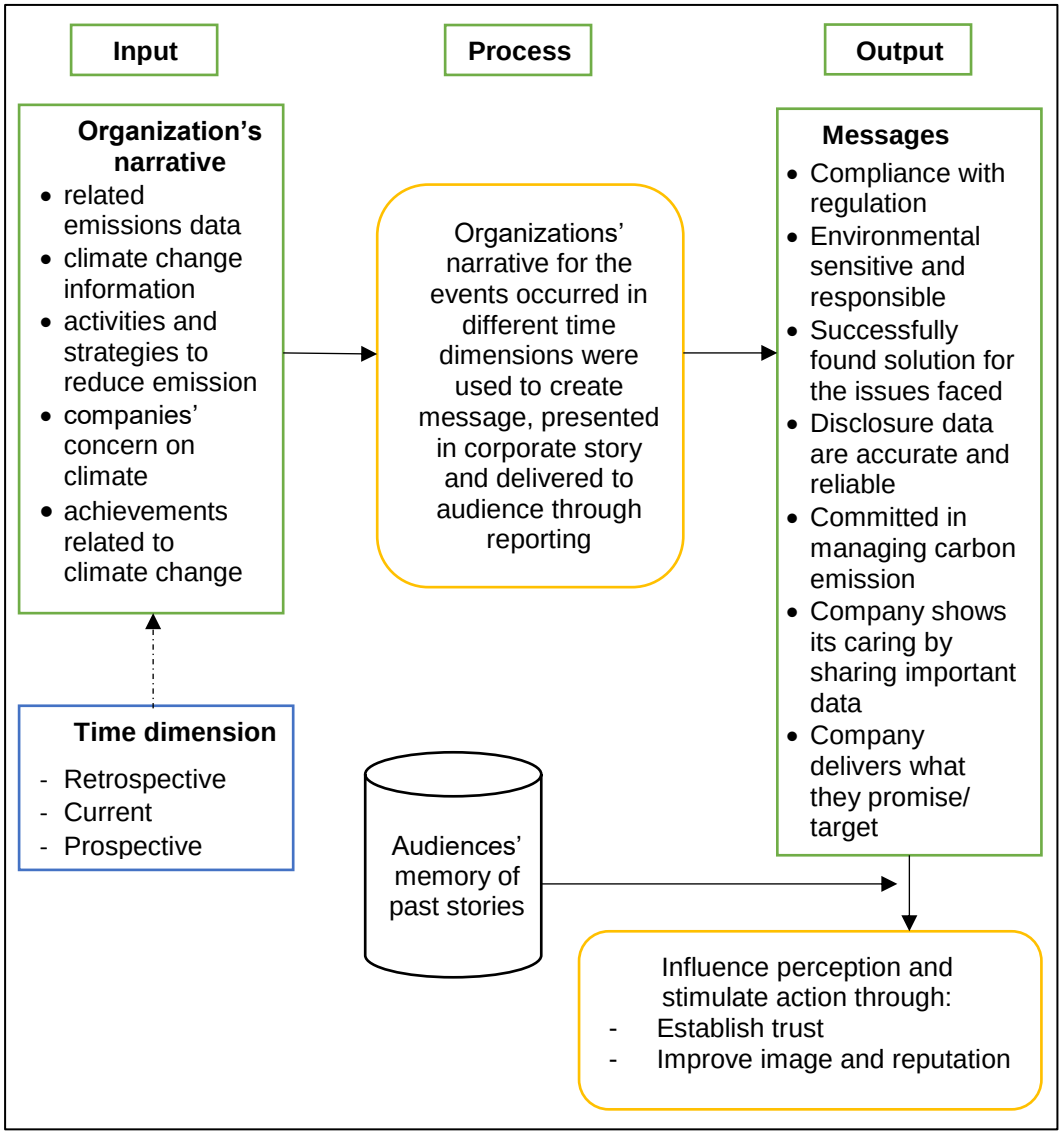


Figure 8.1: Storytelling framework for climate change and carbon reporting

The explanation of the above framework and the key findings are highlighted in following subsections:

i) Compliance message

The carbon emission performance story is core in carbon reporting as it is often used to incorporate the requirements of the MCRR legislation. The inclusion of the mandatory elements in the story presents the compliance message to the stakeholders such as government, supply chain and investors. In supporting the emission performance numbers as required by legislation, supporting explanation and numbers are also included, forming the voluntary carbon disclosure. These voluntary disclosures, which were encapsulated in a corporate story not only garnish the mandatory requirements, but also enhance and provide direction for the audience in understanding the companies' emission performance, action and decision (refer to storytelling framework in Chapter 3). In other words, the stories around the emission performance number help the audience in making sense of it and are likely to positively affect their perception towards the organization.

ii) A good first impression

The story in making sense of the carbon number is found to be a combination of storylines, linked together to develop a coherent story. However, the evidence shows that the structure of the beginning, middle and end (BME) (Boje, 2006) of coherent storylines are not so obvious and not standardised between all the reporting companies. On the other hand, the majority of the selected companies begin their story with the compliance statement (that may form a beginning for the story). The inclusion of this statement as the introduction line suggests that the companies are trying to give a good first impression to the audience; regardless of the favourable or unfavourable emissions performance to come, the companies have measured and reported it in accordance with the regulation. In addition to that, the findings also suggest that companies try to influence audience perception on the credibility and reliability of their data through providing a third party verification statement on their retrospective emission data (Adams, 2004; Dragomir, 2012; Downie and Stubbs, 2012; Cooper and Owen, 2014).

iii) 'Borrow' the story from the expert

"Sharing a story is an empowering act" (Baker and Boyle, 2009 p. 85). The story around climate change raises audience's awareness on the occurrence and impact of climate change is intended to deliver the message that companies are concerned and

are fully aware of their business activities' contribution to climate change. This story may carry a message that the companies are caring about the environment and want to share the important information with the society so that everyone is aware of both the impact on the climate and the organisations' efforts to make changes. The interesting finding from this storytelling is that some companies do not craft their own story but rather 'borrow' it from another established organization like NASA or even from other companies. The findings would suggest that the company may do so for any one or more of the following reasons: the company does not have appropriate expertise to create their own story; the company is saving their resources; and/or company believes that stories from established and expert organisations such as NASA are more credible and reliable. The credibility of the story is important as "a story that is true and trustworthy will be embraced by those who share its values" (Baker and Boyle, 2009 p. 85) thus offering the best opportunity of impacting audience perceptions, decisions and behaviour. In chapter 6, we saw evidence of company using stories from experts (NASA) in order to provide a clear and reliable information on climate change to the audience. Story by the expert on the area can be considered as a story that is "told by the right person" (Marshall and Adamic, 2010 p. 18) in order to foster trust from the audience.

iv) Responsible and committed in managing carbon emission

The story on companies' commitment and effort to reduce emission is expected to accompany the emission performance story. A PwC/CDP (2010) survey found that carbon reporting helped enable emission reduction by driving the company to measure emissions. On the other hand, they suggest that "the act of reporting in isolation does not reduce emissions. It needs to be followed by behavioural and operational changes within the business." (PWC/CDP, 2010). In relation to this statement, the story to raise awareness on climate change may be deemed important by the companies in changing behaviour and encouraging emission reduction within the organization. Kauffman and Less (2012 p.7) put forward that the main motivation carbon emission disclosure requirement is to "induce companies to reduce their GHG emissions, and to facilitate investors' access to this information". This study found that among the popular approach taken by companies to reduce their emissions are through the use of technology and innovation especially in finding the alternative energy, designing a lower carbon emission products, reduce energy use and become more energy efficient, and emission reduction through supply chain. This finding is similar to what was found in the review of past literatures done by Weinhofer and Hoffmann (2010),

where energy efficiency, investment and application of new technology, process improvement and product development and carbon offsetting are among the reductions initiatives taken by companies to reduce their emissions.

Setting reduction target is one of the initiatives taken by companies that may lead to emission reduction (Weinhofer and Hoffman, 2010). The finding in Chapter 6 shows that half of the selected company provide reduction target in their disclosure. Target setting may not just imply that a company is committed towards improving their emission performance but may also suggest that the company has established an appropriate strategy and plan so that the target is achievable. It was evidenced by the finding that a company will receive a lot of criticism from stakeholders and media if they cannot achieve their published target. Therefore, the narrative that discussed the achievement of the target is considered as part of the achievement story.

v) Deliver what was promised/targeted (and more)

In order to impress the audience, and as proof that the reported emission reduction is not just a rhetorical story, companies has also produced the story of their achievement in this area. Companies that lead and demonstrate achievement could be a 'well-respected' company (Dowling, 2006, p. 86). Thus, this type of story would affect audience perception towards a better companies' reputation. In addition to that, Kaye and Jacobson (1999) suggest that the success story could teach, inspire, motivate, and add meaning to the audience. As discussed in Chapter 3, one of the uses of storytelling is to inspire engagement and stimulate action especially from stakeholders and employees (Marzec, 2007). Previous achievement and success may help in setting new achievement goals (Pekrun, Elliot and Maier, 2009) to strive for. Stories of success and achievement therefore, are expected to inspire employees and motivate them to work hard to achieve further success as it serves as an inspiration when they are re-told (Sandercock, 2003).

This study has identified three themes of achievement stories commonly told within the carbon and climate change disclosure. They were: achievement of reduction target, companies' collaboration with other organizations, and awards and recognition received. The story of target achievement is important to prove that the company's reduction strategies are effective, companies are committed with what they say and that the target was set based on a reasonable basis and based on their capability. In reducing their emissions, sometimes companies need to work with other organizations.

Collaboration can create good impressions that the companies have appropriate capabilities and reputation to be trusted and accepted by its partner. Melton (2002) suggests that collaboration offers benefits to the organisation in terms of helping to enhance service, increase the quantity of available resources, increase the quality of services and improve the use of resources. The study found that companies collaborate with other institutions such as universities to foster innovation in terms of new technology and new green products. The collaboration not only enables companies to reduce costs by sharing resources, but may also benefit from the spill over of the good reputation of their collaborative organizations. Collaboration is also a form of symbiotic marketing, where core competency of each party is emphasised and their individual reputations can be endorsed by the collaborating parties (Cooke and Ryan, 2000). In other words, collaboration is an achievement as it acknowledges that the company possesses certain core competencies that attract its partners.

8.2.1.3 The Use of Carbon Reporting in Sustaining Reputation – Motivations for Reporting

Another limitation of previous studies that offers a gap for this study is on the investigation on the motivations that have driven carbon disclosure among companies. In making sense of the company responses toward the pressures to disclose carbon and climate change, it is helpful to understand the motivations and problems faced by the reporting companies (Jeswani et. al, 2008).

Previous studies have placed more emphasis on social disclosure and legitimacy as the disclosure drivers; which may not be applicable in the current situation under MCRR. Previous literature has also focussed more on the determinant factors for disclosure. Possessing all necessary factors such as large in size and high profit does not guarantee companies' engagement in disclosure if companies are not driven by benefits of doing so. This study therefore, contributes to the literature by providing an insight into companies' motivation towards carbon disclosure, especially with the existence of compulsory requirements under MCRR. Interviews with company representatives and consultants illustrated that companies are motivated by legislation, external and internal factors in producing and disclosing their climate change and carbon report.

The findings from Chapter 5 suggest that MCRR has encouraged more companies to disclose their emissions data in their annual report. The change in the extent of reporting is more significant for those companies that reported carbon information for the first time when MCRR was introduced. Therefore, the findings suggest that the statutory requirement is one of the catalysts for certain companies to start measuring their emission data and participating in carbon disclosure. As stated earlier, the introduction of a statutory requirement also raises stakeholder awareness of the risks of climate change, thus increase their expectations and demand for companies to disclosure. Complying with regulation and fulfilling stakeholders' expectation and demands is a powerful motivation that drives companies to disclosure as failure to do so may negatively impact stakeholders' perception on their companies, thus tarnishing their reputation. Most interviewees admitted that their carbon reporting (especially voluntarily) is mostly driven by stakeholders' interest and expectations. In addition, the statutory requirement is also found to be a strong motivation to disclose carbon and climate change information (Okereke, 2007; Jeswani et al' 2008; Kauffmann and Less, 2012).

Fulfilling stakeholders' expectation is a way for organizations to satisfy their stakeholders and demonstrate their adherence to expected norms. According to Dowling (2006 p. 86), corporate stories that resonate with stakeholders' interests and expectations are likely to influence stakeholders to reaffirm and reinforce their belief in companies. This finding is consistent with Okereke (2007) and DEFRA (2010) that the climate change and carbon reporting in increased partly by due to demands from investors and other stakeholders.

Despite the stakeholders' pressure to disclose, it was found that there is mixed opinion as to whether this information could affect investors' decision to invest. The finding suggests that there is a contradictory view on the impact of this information on investment from government side and companies' side. Caroline Spelman, Secretary of State for the Environment (2013[49]) suggests that carbon information forms part of the important considerations in investors' decision making process. On the other hand, Companies C, G and M suggest otherwise. They suggest that there is a need for the companies to comply, but as long as a company does this then there is only limited interest from stakeholders. This finding is supported by Kauffmann and Less (2012),

[49] https://www.gov.uk/government/news/leading-businesses-to-disclose-greenhouse-gas-emissions

where they proposed that investors' interest on companies' climate change-related information has increased, but "there is little evidence on the actual weight of this information in terms of investment decisions" (p. 7). Similarly, they finding shows that companies have expressed their frustration regarding this matter, as their good reporting is not material in investment decisions.

Beside statutory requirements and external drivers, companies also have internal motivators that derive from management and employees' inspirations and financial benefits. Some top management perceived carbon reporting as a mean of being a responsible company and it is a right thing to do (Bansal, Pratima and Roth, 2000; Jeswani et. al, 2008; Hollindale, 2012). PWC/CDP (2010) found that senior management commitment seen to be the key driver behind companies undertaking initiatives to reduce their carbon emission. Other than top management, it was interestingly evidenced by the finding that company also get some pressure from concerned employees, who are eager to participate and contribute to the carbon reporting and reducing efforts. Similar finding was also found in PWC/CDP (2010) survey), where staff interest drive company to engage in carbon management.

Knowing and managing their emissions through energy reduction and energy efficiency benefits the companies economically. Besides being able to tell a story of efforts and commitments; reducing emissions may also lead to the reduction in costs by reducing the energy usage or being energy efficient. As suggested by Nick Clegg, being energy efficient not only saves companies cost for short term and long term, but also improves their reputation with customers. This financial motivation in reporting and managing carbon evidenced from the finding thus support previous literature such as Okereke (2007); Bansal, Pratima and Roth (2000); PWC/CDP (2010), Sprengel and Busch (2011) and Kauffmann and Less (2012).

Regardless of whether the motivations are driven by statutory requirement, stakeholders' pressure, internal pressure, leadership morality and economic benefits, the overall conclusion from the finding suggests that the ultimate goals always lays at maintaining or securing companies' reputation. A similar suggestion was found in PWC/CDP (2010) survey as their result reported that among the top drivers identified as important or very important from their respondents is reputation, together with are pressure from investors and brand drivers. Although classified differently, fulfilling investors' pressure and building brand is also about maintaining and sustaining companies' reputation. Lee, Park and Klassen (2015) suggest that frequent carbon

communication, by exposing carbon management efforts and performance through the media, can mitigate the negative effects of carbon disclosure on shareholder value (p.10). Consequently, the result from this study fits the storytelling concept as the ultimate goals of company crafting and delivering a corporate message to reflect their action, strategies, relationship, decision and behaviour retrospectively, at present and prospectively is to influence audience perception towards their organization. This contribution to the theoretical framework will be discussed further in the next section.

8.2.1.4 Implementation Approach

In terms of the implementation of carbon disclosure, the analysis found that companies may do it alone or with the help of a consultant; or outsource it to the third party. The process of reporting is viewed to be complicated especially in understanding the statutory requirements and measuring carbon emission. As a result, company seeks expertise's help in order to ensure compliance. In addition to that, Zhou (2010) suggests that outsourcing carbon reporting is a mean of verifications from third parties. Besides outsourcing, the use of internal auditors is also argued to replace or complement the external assurance services. In the situation where organizations are unsure or confuse in their reporting process, seeking for consultation from expertise would minimise the risk and give help ensuring that all information had been collected for decision-making (Dobbs, 2012).

It was argued by the interview participants that even though the reporting guidelines are available, it does not accommodate the differences and the uniqueness of each companies as compared to the others. As a consequence, companies benchmark their reporting practice with other companies especially those in the same industry. The benchmarking is not only done in term of reporting but also in term of the strategies to minimise their carbon emission. Even though companies sometimes find it difficult to compare like to like with a similar company due to their uniqueness, benchmarking help companies to get some idea in term of how other companies are implementing it. In addition, the finding also shows that companies believe that the benchmarking done by CDP is useful to them to know where they stand in the crowd between companies in their own industry.

8.2.1.5 Issues Faced in Climate Change and Carbon Reporting

Regardless of the method of implementation by companies, there are several issues and problems faced by them. The findings from this thesis demonstrate that operating as multinational company, data collection, cost and resources, and accuracy of data are the main challenges that need to be faced and resolved by companies in order to report and implement their reduction strategy.

Operating as a multinational company, an organization has to comply with the multiple statutory requirements of their operating companies. The challenge is that these regulations may be similar but different with each other, thus one report does not fit all. This issues was addressed in the previous literature (such as Olson, 2010) that highlight the difficulty in meeting all requirements from enforced standards. The problem with different cultures and understandings of carbon meaning and requirements found in the data (Chapter 7) is also consistent with the previous literature (Chapter 2); which rise the need for globally harmonize regulatory requirements (see Verisae, 2010). The same suggestion was found in the data (Chapter7), where affected companies will be much appreciated if government can introduce one regulation that could fit all purpose of reporting for carbon disclosure. Another two issues found in the data were the problems around the completeness of the data and the high collection and maintenance cost issues. This issues are not new as they were also found and discussed previous studies.

On the other hand, the interesting finding from this study that add to the existing literature is that, data collection and accuracy issues was found to be caused by the lack of knowledge, skills, understanding and appreciation of the responsible staff on the data. Without understanding the importance of the data, responsible staff may not be concerned about the accuracy of data collected and reported. In addition, their lack of understanding of the data and its importance may create an unsatisfactory feeling where the tasks are carried out as an additional burden. According to senior auditor of Agency W, this task may be carried out in ad hoc basis, thus not even form part of their routine and included in their job specification.

Reporting and maintenance cost is another issue. As stated earlier, due to the complexity of the requirement and data maintenance, companies may need to seek for the third party service, thus incurred additional reporting costs. If companies implement it in-house, additional staff may be needed to maintain the data from time

to time. Training for staff also necessary to ensure that they possess appropriate skills and knowledge in doing their job.

Meanwhile, high cost, lack of awareness and scarce resources are also found by Jeswani et al (2008) as the significant barriers for the companies seeking to implement emission reduction strategies. The PWC/Defra (2010) survey found that one of the barriers to effective carbon reporting is competing priorities with other business objectives that make carbon management a low priority. This suggests that many companies do not see the potential benefits of carbon management, or that the perceived benefits are not that significant (p. 35).

Despite of all the challenges and issues faced by the organizations the introduction of the MCRR has very significantly improved companies' disclosure with a high rate of compliance reported in this research (see Chapter 5). As the framework in Figure 8.1 shows, all the messages communicated to the audience, either explicitly or implicitly can be interpreted, at least in part, to be designed to give a good impression to the audience in order to influence their perception and behaviour towards the organization (Schultz et al, 2002; Gill, 2014)

8.2.2 Theoretical Contribution

This thesis contributes to the theoretical framework in two ways. First it offers a complement to the use of legitimacy theory and impression management theory; and secondly, it extends the application of storytelling to the area of climate change and carbon reporting.

8.2.2.1 Storytelling as a Complement to Legitimacy and Impression Management Theory

This study suggests that the storytelling concept can help complement both legitimacy and IM theories in explaining areas such as stimulating action, knowledge sharing and making sense of change in organization. At the same time, it can also be used as a tool to gain legitimacy and influence audiences' perception towards corporate image and reputation.

As mentioned in Chapter 3, legitimacy theory is the dominant theory in qualitative social and environmental accounting research, including on carbon reporting. It has

become one of the most cited theories within the area (Hooghiemstra, 2000; Tilling, 2004). The disclosure of environmental and climate change data was assumed to be used by companies to be engaged in to gain legitimacy especially from society. In terms of a social contract to operate (see Guthrie and Parker, 1989; Deegan and Rankin, 1996; Campbell, Craven and Shrives, 2003; Van Der Laan, 2009; Buniamin, 2010; Hrasky, 2011; Gallego-A´ lvarez, Rodrı´guez-Domı´nguez, and Garcı´a-Sa´nchez, 2011; Pellegrino and Lodhia, 2012). However, legitimacy theory is criticized as not being suitable in the context of mandatory reporting; as it can't explain the non-compliance behaviour (Adams et al., 1995; Adams, 2008; Comyns and Figge, 2015). With regard to carbon reporting, Borghei-Ghomi and Leung (2013) suggest that it seems more likely that well performed companies do not disclose for legitimization, but to capture the benefits of communicating good news.

Storytelling has been used by organizations for a variety of reasons and one of these is to seek and maintain legitimacy (see Gardner and Smith, 2006; Marzec, 2007; Maclean, Harvey and Chia, 2011; Garud, Schildt, and Lant, 2014). For instance, Maclean, Harvey and Chia (2011) demonstrate that storytelling provides an effective vehicle for legitimacy-claiming by business leaders. Meanwhile, Gardner and Smith (2006) discuss the role of storytelling in legitimation of financial performance measures used by Enron. Marzec (2007) suggests that storytelling is used by organization to legitimise their decision and action by giving a "clear, structured, compelling articulation of ''who we are'' and ''where we're headed to" (p. 26).

Unlike legitimacy theory which is criticised as not suitable for mandatory reporting; storytelling can be applied in both situation. This is because, through storytelling concept, the ultimate purpose of the corporate communication (or disclosure) is to send a corporate message that could influence stakeholders' perception, decision and action (Gill, 2011, 2014).

Storytelling is seen to have some similar objectives to IM, which is to influence audience perception favourably towards the organization (Sclenker, 1980; Arkin and Shepperd, 1989; Rosenfeld, Giacalone and Riordan, 1995). The message delivery approach may differ but they have overlapping aims. Spear and Roper (2013) found that companies incorporate IM tactics in their corporate storytelling. On the other hand, companies can also deliver the message in seeking to develop each tactic using storytelling. For example, in order to deliver the message of an apology in pursuing a defensive tactic using IM, the company may include the story of why the negative event

happened, their feelings around the event and what they have done to try to remedy the negative consequences. In influencing audiences' action and perception, storytelling can be freely enriched and customised based on the culture of the companies and audience. This includes the emotional elements that could be included in the story as to attract and audience attention and generate emotional connections (Sole and Wilson, 1999; Marshall and Adamic, 2010). In addition to that, companies can employ a variety of tools for enriching and delivering the story; such as through the use of media audio and videos; and communicating through the traditional method of hardcopy text or even online. With the advancement of technology digital storytelling is introduced and variety of multimedia format of storytelling such as Facebook and Blogs are widely used (Couldy, 2008).

Whilst having similar features and aims to IM, storytelling is not limited to maintaining or repairing image, but also to affecting an audience's action and reaction more broadly. For example, storytelling was suggested to be used to engender employees' loyalty and engagement (Marzec, 2007; Gill, 2011; McDaniel and Malone, 2015); as well as inspire employees' action (Marzec, 2007). In addition to that, stories can also be used as a medium for knowledge sharing within the organization or even with external audience (Denning, 2006; Boyce, 1996).

With the ability to use as a mean of gaining and maintaining legitimacy, storytelling application is used more broadly and one of the purpose of storytelling widely used is as a tool for sensemaking (Boje, 1991; Boyce, 1995; Berry, 2001; Driver, 2009; Maclean, Harvey and Chia, 2011; Reissner, 2011; Kupers 2013). For this purpose, storytelling is commonly used by those researchers as a tool to make sense of corporate change. As for this study however, storytelling concept is useful for the audience to make sense of the companies' carbon performance. From the above discussion, it was evidenced that storytelling can be used to achieve the purpose of legitimacy theory and IM theory and more.

8.2.2.2 Capturing the additional usage of corporate storytelling

Giving the uses of storytelling found in the previous literature (refer to Table 3.2), the investigation of the use storytelling in corporate reporting especially for climate change has added to the additional usage of storytelling in organization, which is making sense of companies performance and reported emission data. Previously, literature has used storytelling concept for making sense purpose, especially making sense of corporate

change (see Boje, 1991; Boyce, 1995; Berry, 2001; Buchanan and Dawson, 2007; Driver, 2009; Maclean, Harvey and Chia, 2011; Reissner, 2011; Kupers 2013). Buchanan and Dawson (2007) suggest that stories are used to frame change by reporting the sequence of change event and explain the change process.

In climate change and carbon reporting, this study found that stories can be used as an apparatus for making sense of emission performance (refer figure 8.1). For this purpose, it was found that companies incorporate number and text together in explaining their performance so that audience can accept the reported data presented to them through companies' disclosure especially in annual report. Through the analysis of data, it was found that companies accompany the emission number (tonne of carbon emission) by the explanation of how the number is calculated. This includes the calculation methodology used, the emission boundary, reporting period, the scope of emission and its definition, as well as the conversion factor that they used in order to convert raw GHG emissions into carbon equivalent data.

This study not only extends the application to climate change and carbon disclosure area, but also adds to the scarce literature on the use of storytelling in the companies' reported documents. This is because most of the previous literature concentrates on oral storytelling rather than text or reported storytelling (Boje, 1991).

In addition to the above, the use of a storytelling lens in this research also emphasises the time dimension in corporate storytelling, as suggested by Boje (1991); Dowling (2006); Marzec (2007); and Gill (2014). As mentioned in Chapter 3, the current story that is reported or included in company reports is typically around "what is happening now" (Walker, 2011 p 68). According to Baskin (2004), prospective stories explain "what might have happened", which later turn into retrospective when "it did happen". Dowling (2006) emphasises the balance between these three dimensions of stories. The author claims that "a heavy emphasis on past achievements may suggest that the company is past its prime", while "a heavy emphasis on the current situation may resemble a report card". On the other hand, "a heavy emphasis on the future may sound too prognostic" (p 85).

As depicted in Figure 8.1, the findings from this study show that all three dimensions are applied in the corporate stories, on emissions reporting, investigated. Retrospective stories involve stories of the past such as on carbon performance, since the reported performance is for the last accounting period/year. Similarly, stories of

achievement delivering the message of what have been achieved by the company, form a retrospective story. Meanwhile, current stories often draw on explanations, or data on, the current status of climate change around the globe. On the other hand, the stories of effort and commitment often involve all three time dimensions. For example, companies may describe what initiatives they have been, or are, engaged in to reduce their emission and how successful these strategies have been in bringing down their reported emissions. At the same time, companies also disclose the strategy that they are applying in the current period that may be only recently implemented. The findings show that companies often include future planning and strategies in their stories, thus represent the prospectus aspect of their story which is invariably positive. The climate change and carbon stories disclose by organizations across various media typically incorporate all time dimensions and suggest that corporate storytelling is designed to ensure a balance in the story formats they use to report to give them the best chance to influence audience perceptions.

8.2.3 Practical Contribution

This thesis not only contributes to the scope of climate change and carbon literature, but also has a practical contribution. The UK was the first country to make it compulsory for companies to include emissions data for their entire organisation in their annual reports (DEFRA, 2012). Therefore the UK mandatory reporting environment could provide a benchmark for other countries especially those who want to follow the mandatory route. Finding from Chapter 5 shows that MCRR has effectively encourage companies to disclose their climate change and carbon data. This has provided important evidence to policy makers that soft enforcement through 'Comply and Explain' is a good approach in introducing new regulations. This study suggest that part of the reason for the successful implementation is because companies are motivated to comply with regulation in order to fulfil stakeholder expectations, as well as to maintain a good image and reputation.

On the other hand, the interviews revealed criticism about a lack of monitoring and review from policy makers (refer to Chapter 7). A number of interviewees reported that so far, there have been no surveys or monitoring of the progress by government agencies. This study has provided data on the ways companies implement MCRR. This has been through a combination of in–house and using consultants or in some cases complete outsourcing. Both the use of consultants and in-house implementation is costly and companies also need to factor in to these decision on internal or

outsourcing how they will seek to maintain disclosure over time. Policy makers should also be aware that too many legislative requirements provide an increased burden on organizations, especially those that operate internationally. Policy makers might also investigate ways to help companies solve some of the issues faced by them in responding to the emissions legislation and seek to encourage improvement in disclosure practices. As mentioned earlier, knowing the motivation and issues in reporting would help policy maker to understand companies' response towards MCRR (Jeswani, 2008).

The widely use of consultant and outsourcing services in carbon management in general and in data collection in particular (refer to Chapter 7) reflect the lack of competency and expertise within companies. Lack of understanding, skill and appreciation of the data could lead to inaccurate information being collected, estimated and reported. Therefore, this study would emphasise the importance and need for staff training and awareness program from both the organization and the government so that the quality of data disclosed can be improved. As for the companies, this study would provide an insight of how other companies in their industry is doing. Benchmarking is a good way for the company to know where they stand. In addition to that, they could also imitate the implementation approach used by other companies that they feel fit with their business activities. These practical contributions are discussed in detail in Chapter 9 (refer to section 9.3).

CHAPTER 9: CONCLUSION

9.1 INTRODUCTION

This chapter provides a conclusion of the study as well as the practical implication of study especially to the reporting organizations, policy makers and consultants. In addition to that, the chapter also include the limitation of the study, such as the unequal distribution of sample size according to industry and lack of participants from government agency. These limitations are then accompanied with the suggestions for future studies. This chapter is concluded with the researcher reflection on research process.

9.2 CONCLUSION

In accord with the objectives presented in Chapter 1, this research has investigated the implementation of mandatory carbon disclosure under MCRR which was introduced by the UK government in October 2013. As noted in Chapter 1, climate change is, and is predicted to continue changing the planet by raising the global air and ocean temperatures, thus affected everyone and every organization (Scavia et. al, 2002; HM Government, 2010; Hunt and Watkiss, 2011; DECC, 2012). Since the first step in emission reduction is to measure it (Zhou, 2010; DEFRA, 2013), introducing MCRR by the UK government is intended to encourage, or prescribe, greater transparency around the impact of companies' activities on the environment, as well as motivate appropriate emission reduction strategies and initiatives.

Chapter two illustrated that laws and regulations are perceived to be one of the solutions needed to require and further improve the quality of both mandatory and voluntary disclosures. This research was motivated to evaluate the impact of the newly introduced regulation on carbon reporting (MCRR) to the companies' disclosure; how companies present their disclosures; and the dynamic of the disclosure implementation, including the motivation for reporting and the issues faced by the companies.

This research is distinguished from previous studies as it covers aspects of disclosure not explored before such as: the investigation of companies' mandatory disclosure in comparison to voluntary disclosures; carbon disclosure through the apparatus of

storytelling; the motivation behind their voluntary disclosure and compliance; as well as some limited exploration of the issues reporting organizations faced in the identification and measuring of emissions. The thesis concentrates particularly strongly on mandatory reporting in the UK context; which has limited coverage from previous literatures. The thesis also moved away from the common quantitative content analysis of the corporate disclosure and makes use of qualitative analysis in order to improve understanding (Tregidga et al., 2012) on corporate climate change and carbon communication. In addition, this thesis blends the investigation on disclosure through content analysis with the dynamics of implementing carbon disclosure.

The empirical findings of the thesis are presented in three chapters; Chapter 5, 6 and 7. Chapter 5 investigates the impact of the introduction of MCRR on companies' climate change and carbon disclosures. The findings are broadly positive. The introduction of MCRR does, as anticipated, improve the number of companies reporting as well as the content and quality of disclosure. Chapter 6 reveals that companies did appear to utilise well documented features of storytelling to deliver carefully designed and targeted corporate messages of carbon reporting and emission reduction policies. The discussion and analysis presented in this chapter identify different storytelling apparatus applied across different media of reporting, and targeted at differentiated audiences. Chapter 7 sought to assess and speculate on aspects of the motivation behind the approaches to disclosure and found that influencing stakeholders' perceptions and reputation appear to be the main motivation behind much disclosure reporting and the style and structure of this reporting.

In dealing with the complexity of legislative requirements, the findings reveal that companies use several approaches in implementing their carbon management and reporting: fully in house, seeking help from consultants, or more or less complete outsourcing. The empirical evidence also suggests that data collection and maintenance is the main issue faced by companies in reporting their carbon data, especially if the companies operate internationally.

9.3 IMPLICATION OF THE STUDY

As discussed earlier, the finding of the study would benefit policy makers, companies, as well as third parties, such as consultants. Accordingly, the first major practical contribution of this study is that it provides empirical data on the implementation of mandatory carbon reporting to the policy makers so that they know whether their decision to mandate the reporting is effective or not. This information is important, given that MCRR is only made compulsory in the year 2013 and no formal monitoring was found to be carried out regarding the practice.

Exploring in depth the problems faced by the organizations would give policy makers a clear picture of what kind of improvement should be done to the newly introduced regulation, especially before it could be considered to be expanded to all other large companies (as planned before). In responding to the issues raised by organizations, for instance, in the 2016 Budget report, the UK government have taken initiative to reduce the multiple carbon reporting requirements (which form one of the issues in carbon reporting) by considering of scrapping CRC and maintaining MCRR. In this case, the government chooses to listen to the reporting companies such as Aviva, BT, M&S, and National Grid who signed an open letter to the Independent newspaper calling for MCRR to be retained[50].

The lesson learned from the finding would give a valuable input to other countries who are willing to follow the UK's footstep in mandating the carbon reporting. Among other things, the study points out that the regulation does help in motivating organizations to disclose, thus provide better transparency on the impact of their activities on the environment and climate change. However, the finding also suggests that it is important for the policy makers to get input from the affected organizations before and after the implementation of any new regulations. This is to ensure that the requirements can be complied practically and organizations receive benefits in doing so. In addition to that, it was evidenced that a 'soft' enforcement would be a good beginning for any new regulations to encourage compliance.

A second important implication of this study derives from the finding of the way the carbon management and reporting are implemented in organizations. Not only that the

[50] The Environmentalist (2016). http://www.environmentalistonline.com/article/budget-2016-mandatory-ghg-reporting-retained

research explore the reporting contents and how organizations response to the new regulation; the study also dig into the implementation approach used by organization especially in ensuring that they are in compliance with MCRR. Besides using in-house expertise, the finding suggests that consultation and outsourcing are the common practice especially in data collection of carbon emission. This is because to ensure the accuracy and reliability of the data, organizations need for expertise and system that can reliably capture the emission data to be reported. This data must be able to fulfil the emission boundary set by the company, as well as emissions' classifications by source, as required by regulation. As the consequences, some companies incur a high compliance cost that cause a burden to them. In this regard, government or policy makers may work together with the organizations in grooming the internal expertise through training and workshops so the costs can be minimised. In addition to that, knowing that some companies have their in-house expertise and has developed a proper system for carbon accounting and management; other companies can take initiatives to learn from them through knowledge sharing and smart partnership.

Learning from others is not limited to how they capture and account for their emissions, but also on how others report their data and minimise their emissions. Even though the DEFRA guidelines have specified the disclosure for both mandatory and voluntary items together with reporting example; it is for general use rather than for a specific type of organization or for any specific sector. Consequently, this 'one for all' guidelines may be hard for certain organizations to follow. Thus, benchmarking from companies in the same industry is vital in providing guidance by example that can direct organizations in their emission reporting. The use of others' emission data as a benchmark not only can be utilised by organizations; but the need also expressed by legislators and investors (CDSB, 2010). Organizations can benchmark themselves not just in term of reporting and implementation, but also in term of emission mitigation. The finding of the study points out that organizations have taken many ways in minimising their emissions such as reduction through process, product, and supply chain. In doing this, organizations have utilised the technology, research and development, as well as collaboration with others. An organization can take initiatives to work together or share the knowledge in this area as emission mitigation is not about business competition, but for the better future by contributing towards a healthy planet. As mentioned by one of the interviewees, "it is interesting to talk to someone [from other organizations] and find out what they do. This isn't exactly competition when you are looking at reducing emission".

Another practical contribution to the organizations that is brought forward by the finding of this thesis is the awareness on the importance of the message in their reporting. As reporting carbon stories would influence stakeholders' perception and action (Du, Bhattacharya, and Sen, 2010), therefore crafting a good message through carbon reporting is vital. The finding shows that the reporting could be used to carry important corporate messages such as their commitment towards mitigating climate change; the reliability and credibility of their data and the highlight of companies' achievements in the related area. Besides the important of the right message in corporate communication, the study also highlights the importance of the right medium and apparatus of communications; as it will influence the presentation and the target audience.

Knowing the issues faced by the organizations in implementing carbon disclosure does not only benefit policy makers but also the consultants. Consultants would be better informed of the potential areas that their clients need help the most. For example, capturing and measuring emissions data is found to be the most problematic area for organizations. Thus, consultants should take this opportunity in finding alternatives and solutions to be offered to their clients in order to cope with the above issues. Besides helping organizations to comply, this is a good business opportunity for the consultants to offer to their clients.

9.4 LIMITATION OF THE STUDY AND SUGGESTION FOR FUTURE RESEARCH

This research contributes to several empirical, practical and theoretical areas as discussed in Chapter 8 above. However, despite these contributions, there are a number of limitations that need to be addressed where future research may be taken up. This section therefore will briefly discuss the study's limitations and some suggestions for future research.

9.4.1 Distribution of Sample by Industries.

Limitation: The sample used for this study excludes financial institutions for the reasons discussed in Chapter 4. Due to the constraints of the availability of the annual reports during the data collection period, certain number of companies need to be further excluded. As consequences, the numbers of companies included are not normally distributed among industry. Thus the result may not be generalised and

represent the entire sectors. Similarly, the investigation of the corporate storytelling was investigated based on the companies that have a high scored in CDP, high emitters and high score for DEFRA guidelines. This type of companies basically have a high volume of disclosure and come from environmental sensitive industry, thus their story theme is quite similar.

Future research: Based on the above-discussed limitation, I would suggest that future research should have a more equally distributed number of sample in each industry for better comparison. Smaller companies may have different story them in their disclosure and the way they present it may also be different and interesting to explore.

9.4.2 Participant from Government Agency

Limitation: The research interviews were predominantly of company representatives. Consequently the views collected and analysed represent mostly the companies rather than policy makers. The problems faced in getting in touch with and getting a response from the appropriate staff in the relevant government departments such as Department of Environmental and Climate Change (DECC), has limited the richness and the balance of the data. In addition, data collected from government agencies such as DEFRA is not really useful because of the lack of knowledge from the interviewee. This interviewee was a new appointment to the department.

Future research: Future research should include a broader view of policy maker and investigation of their view on the implementation of MCRR would be interesting. It would be worth exploring the government's future plans regarding the statutory requirement as well as how they would encourage disclosure improvement among companies.

9.4.3 Source of Data

Limitation: The stories investigated in this thesis are drawn from company reports. However, there are also many stories about the companies' carbon and climate change information that are being told by the third parties through other media such as the internet and business news outlets. These third party stories will contain more of a mix of positive and negative elements as compared to corporate story that tend to focus on favourable disclose stories.

Future research: The exploration of companies' stories from other sources than the company itself could reveal interesting findings and may reorient audience perception of company image and reputation. This kind of research could provide further insights into the use of storytelling.

9.5 REFLECTIONS ON THE RESEARCH PROCESS

The process of conducting this research and analysis has been such an insightful and memorable experience for me. I have learned a great deal, especially on the dos and don'ts of the research process. Besides gaining invaluable skills and knowledge, I have come through a demanding experience throughout the process of completing this research. This includes activities such as defending my research proposal, gaining access and finding research participants, collecting and analysing data, presenting in doctoral colloquium and conferences, dealing with ethical matters, and writing and revising the thesis. One of the most challenging parts is to theorise the data making use of insights from the chosen theoretical framework. I found choosing an appropriate theory for this research was very challenging. But after choosing a storytelling approach I found the theory to be both a great challenge to apply within the research process, but also of considerable value in offering a coherent framework from which to interpret my research data and writing up and structure the thesis.

One of the challenging activities in the data collection phase was in getting participants to agree to take part in the study, taking into account the lack of any prior research networking of the researcher in the UK. In spite of the resultant frustrations and slow start that resulted, my involvement during the interviews and content analysis procedure has enabled the collection of a significant amount of data, which permitted the researcher to link the theoretical and practical aspects of the phenomena studied. This also provided a means to further understand the companies' motivations, implementation approach, and issues and problem faced in the reporting of carbon emission and climate change. Although it is impossible to incorporate all of this material, it has provided treasured primary data and material in building the discussions in this thesis. This study has provided challenging opportunity to comprehend aspects of content analysis in supporting the textual data collected from the interviews to address the research objectives. In addition, it also has also provided the opportunities to explore and evaluate the significant differences (and improvements) between the voluntary and mandatory reporting of climate change and carbon emission information.

On the whole, while the PhD voyage has been challenging it has offered vital preparation for my research as an academician at Universiti Utara Malaysia. It has been invaluable in enhancing my research skills and knowledge of the literature and research process. I have acquired the confidence in my ability to become more active and effective in the research and related activities, including sharing knowledge with others and contributing to research outcomes by publishing articles, writing books, presenting in the conferences, teaching and providing consultation work. It is crucial for the researcher to be effective and outstanding in research and publication activities, which can be achieved by improving and increasing research skills and refining writing capabilities. This skill and knowledge has helped me to realize the importance of know-how and also patience in conducting serious research. Last but not least, the knowledge and experience that I have gained during this PhD journey, particularly in relation to the student-supervisory aspects and research skills and philosophy can be extended and shared with other students, future PhD candidates and others.

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APPENDICES

Appendix 1: Information Leaflet

Aston University
Aston Triangle
Birmingham B4 7ET
United Kingdom
Tel +44 (0) 12120430
www.abs.aston.ac.uk

PARTICIPANT INFORMATION LEAFLET

You are being invited to take part in a research study. This is being carried out by a doctoral student from Aston University, UK. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully. Please feel free to ask us if there is anything that is not clear or if you would like more information about it.

Title of the study

Mandatory Carbon Reporting in the UK Public Listed Companies

Purpose of the study

The aim of the research project is to investigate the carbon reporting practise in FTSE 350 companies; covering three main areas of investigations including the extent of carbon reporting in the first mandatory year as compared to a voluntary year; the common stories told in companies' climate change and carbon disclosure; and the dynamic of carbon reporting implementation, including the motivations for disclosure, the problems and issues faced and the implementation approach. This study also intends to investigate the organizations and policy makers' perceptions on the implementation of MCRR.

Why have I been invited to participate?

You have been identified as someone who has a great deal to share about carbon reporting and carbon reduction initiatives taken in your organisation. The objective of organizing this interview is to develop a deep understanding of organisations' responses towards mandatory carbon reporting and how it is implemented.

Do I have to take part?

Taking part in the study is entirely voluntary. It is up to you to decide whether or not to take part. If you do decide to take part then I will describe the whole study to you. You will be given this information sheet to keep and be asked to give your formal consent to start the interview. If you agree to take part and later change your mind, you are free to withdraw from the study at any time and without giving a reason. If you do withdraw, your data will no longer be used in the study.

What is involved if I decide to take part?

If you decide to take part in the interview, you will be asked to discuss your point of views on the implementation of mandatory carbon reporting, your organisation's response to it and efforts made to reduce carbon emissions. The face-to-face semi-structured interview is not expected to take more than 1 hour.

Will I be recorded, and how will the recorded media be used?

The interview will be recorded as I do not want to miss any of your comments. All responses will be kept confidential. This means that your interview responses will only be shared with my doctoral supervisors. No other use will be made of the interview data without your written permission, and no one will be allowed access to the original recordings. If you want you can review the transcript to check its accuracy or to remove any incautious remarks.

What are the possible disadvantages and risks of taking part?

There are no known risks associated with your participation in this interview. Every care will be taken to ensure that you are comfortable with the content of the interview. However, if you feel uncomfortable at any time, you may withdraw or skip questions without further explanation.

What are the possible benefits of taking part?

This project may help the government and policy makers get some insights into the practical implementation of mandatory carbon reporting and measurements taken by organizations to reduce their carbon emissions. The research would help the organizations in enhancing and improving the requirements in the future. The study would also provide you with an opportunity to contribute to a process of sharing knowledge, experiences and also reveals the best practices for carbon disclosure implementation by other organisations.

Will what I say in this study be kept confidential?

All information gathered during the course of the research will be kept strictly confidential. None of the reports or publications from this study will include any information identifiable to you as an individual. In fact, the data will be anonymous (unless you say otherwise) so that even if it could be accessed, it would not be attributable to any individuals.

The interviews will be recorded on a digital recorder which will then be uploaded to a password-protected computer at Aston University and the digital recording will be deleted from the recording device. All paper documents will be kept in a locked cabinet on secure premises in accordance with the Data Protection Act. All data will be kept for up to 5 years after which it will be destroyed securely. Electronic copies of the transcripts will be stored securely and confidentially: access to these will be limited to me and my doctoral supervisors and will be password protected.

What will happen to the results of the research study?

The research findings will be used in a thesis to be submitted at Aston University as part of my PhD degree in Management. Results will be presented in academic conferences, and may be published in peer reviewed journals, as well as seminars and workshops with academics, professionals and policy-makers in the UK. You will not be identified in any report/publication unless you have consented to release such information. I would be happy to share the findings of the study with you and other participants if you are interested

Who is organizing and funding the research?

The study is conducted by me (Wan Norhayati Wan Ahmad) and I am a full time doctoral student in Accounting Group of Aston Business School, UK. My doctoral program is currently funded by Aston University, United Kingdom.

Who has reviewed the study?

The study has been approved by the Aston University's Research Ethics Committee to ensure that the study meets ethical standards.

Further information and contact details:

If you have any concerns this study or if you would like any information about the study, please contact me:

Wan Norhayati Wan Ahmad
Doctoral Researcher
Finance and Accounting Group
Aston Business School
Aston University
Birmingham B4 7ET, UK
E-mail: wanahmwb@aston.ac.uk
Cell (UK): +44 7415512925

Or if you have any concerns about the way in which the study has been conducted then you can contact our research convenor :

Prof. Alan Lowe,
Finance and Accounting Group
Aston Business School
Aston University
Birmingham B4 7ET, UK
Email: a.d.lowe@aston.ac.uk
Phone: +44(0)121 204 3370

Thank you for your time!

05/12/2014

Appendix 2: Interview Invitation Letter - Company

Aston University
Aston Triangle
Birmingham B4 7ET
United Kingdom
Tel +44 (0) 12120430
www.abs.aston.ac.uk

22 April 2015

Dear Mr Sir/Madam,

INVITATION TO PARTICIPATE IN INTERVIEW

My name is Wan Norhayati, a doctoral researcher at Aston Business School, Birmingham. My research is being supervised by Professor Alan Lowe (Aston University) and Professor Stuart Cooper (Bristol University). I am conducting a research project on Mandatory Carbon Reporting Requirements (MCRR) as defined in The Companies Act 2006 (Strategic Report and Directors' Reports) Regulations 2013 for public listed companies. To this point, I have analysed companies' carbon reporting both before and after the introduction of legislation and found that generally, the quantity and quality of carbon disclosure has improved. I would greatly value the opportunity to speak with you to further understand the impact that this legislation has had on your organisation.

I would be very grateful if you could allow me to interview yourself or the most appropriate person in your department regarding your opinion on MCRR, the implementation and your company carbon reduction initiatives. The interview could be face-to-face, phone or Skype; whichever suit you the best. All information will remain strictly confidential. Participating organisations and individual participants will not be expressly identified, unless expressly requested required or agreed by participant companies.

I believe your view, opinions and suggestions will be extremely valuable to my research and will help inform future government policy in this regard. If you wish to discuss the project in more detail before reaching a decision, I am happy to be contacted at any time. Further information regarding my research is provided in the attached leaflet. If you have any questions or are willing to participate, please contact me at wanahmwb@aston.ac.uk.

Yours sincerely,

Wan Norhayati
Researcher
Email: wanahmwb@aston.ac.uk
Mobile: 07415512925

Appendix 3: Supervisor's Supporting Letter

Aston Business School

Aston University
Aston Triangle
Birmingham B4 7ET
United Kingdom
Tel +44 (0) 12120430
www.abs.aston.ac.uk

19th December 2014

To whom it may concern

This is to confirm that Ms. Wan Norhayati is a full time Ph.D. student at Aston Business School, Birmingham, United Kingdom. She has successfully completed her qualifying report and the first stage of data collection. To this point, she has analysed companies' carbon reporting both before and after the introduction of Mandatory Carbon Reporting Requirement (MCRR). Wan is now starting the second stage of data collection through interviews with relevant expert professionals. I confirm that this work constitutes an integral part of Wan's doctoral research.

The aim of the project is to investigate the impact of the introduction of MCRR on the carbon disclosure (specifically the quantity, quality and reduction initiatives) of the UK public listed companies. The research will involve interviewing public listed companies' representatives, as well as government agencies, especially those who are involved in the MCRR design and implementation.

I really hope that Wan will be given opportunity to interview your company and get the valuable information that beneficial to her study and the enhancement of the newly introduced legislation.

If further information or clarification is required, I can be reached at (+44) 0121 204 3370 or a.d.lowe@aston.ac.uk.

Yours sincerely,

Professor Alan Lowe
Finance and Accounting Group
Aston Business School
Birmingham
B4 7ET

Email: a.d.lowe@aston.ac.uk

Appendix 4: Consent Form

Consent Form

Title of the Project: Mandatory Carbon Reporting in the UK Public Listed Companies.

Name and contact address of Doctoral Researcher:
Wan Norhayati Wan Ahmad, Accounting Group, Aston Business School, Aston University, Birmingham B4 7ET, UK. E-mail: wanahmwb@aston.ac.uk; Cell (UK): +44 7415512925

Alternatively, you may also contact our research convenor:
Prof. Alan Lowe, Accounting Group, Aston Business School, Aston University, Birmingham B4 7ET, UK. Email: a.d.lowe@aston.ac.uk; Phone: +44(0)121 204 3370

Supervisory Team: Prof. Stuart Cooper. Email: s.m.cooper@bristol.ac.uk

Please put a check mark (✓) in the boxes:

- I have read and understood the attached information sheet giving details of the project. ☐
- I have had the opportunity to ask the researcher my questions that I had about the project and my involvement in it and understand my role in the project. ☐
- I understand that my participation in this project is voluntary and I will not be paid for my participation. I am free to withdraw and discontinue participation at any time without giving any reason. ☐
- I understand that taking part in this project will include being interviewed and audio recorded. If I don't want to be recorded, then notes will be taken during the interview. ☐
- I understand the data gathered in this project may form the basis of a doctoral dissertation to other form of academic publication or presentation. ☐
- I understand that the data I provide will be treated as confidential, my anonymity will be protected and the researcher will not identify me or my organization by name in any reports, publication or presentation using information obtained from this interview. ☐
- I have been given a copy of this consent form. ☐

Participant's Signature: _____ Date:

Participant's Name (BLOCK CAPITALS):

Researcher's signature: _____

Appendix 5: Interview Guide

Interview Guide

Voluntary disclosure

1. Overview of voluntary disclosure (if any) – when, document, CDP
2. Motivation for voluntary disclosure

Mandatory disclosure (MCRR)

3. Changes made caused by MCRR
4. Other mean of reporting beside MCRR
5. MCRR compliance level
6. Motivation for compliance
7. Opinion on MCRR
8. Opinion on available guidelines regarding MCRR
9. Confirmation/clarification on certain reporting items – choice of methodology, intensity, boundary, etc

General Reporting

10. Challenge/issues in reporting carbon
11. The process of carbon reporting
12. Benchmarking with other companies
13. Stakeholders' feedback on companies' climate change and carbon reporting
14. Initiative taken to reduce emission