The Fossil Fuel Industry and the Challenge of Climate Change

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A study of Shell's position

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Doctor of Philosophy

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Summary

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This thesis is a study of the way in which Shell positioned itself in relation to the debate over climate change that developed from the late 1980s to the end of the 1990s. A key event in this process was the negotiation of the Kyoto protocol.

The research considers the contribution of factors such as the culture and structure of the organisation and events in Shell's recent and more distant past that may have influenced organisational decision making processes. The thesis discusses how responses to a combination of key events at a particular time led to a particular outcome through a process of path dependency.

The research takes the form of a single case study. The source of primary data was semi structured interviews with key individuals linked to Shell. Secondary data came from speeches by senior Shell managers, other Shell documents and media reports. The findings are written in the form of a historical narrative.

A key underlying factor in determining the position Shell took was found to be the fact that the organisation was based in Europe. This meant that it was subjected to public opinion that would have reacted negatively to denials of the significance of climate change, and refusals to support action to address the issue. It also meant that Shell was subject to the influence of European policy making, which appeared to take a strong position on climate change in the early to mid 1990s. This meant that organisations operating in Europe had a clear expectation of increasing regulatory controls on greenhouse gas emissions.

These underlying factors were reinforced by the profoundly negative public reaction to the disposal of the Brent Spar and to operations in Nigeria in 1995. Lessons learnt from this and a concern for the organisation's legitimacy made Shell's positive position on climate change and its support for the Kyoto process inevitable.

Keywords: strategic planning, oil industry, sustainability, Kyoto

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Chapter 1

Introduction

This chapter describes the research question, and what this research aims to achieve. It explains why this particular topic and this specific question were chosen. It briefly outlines the methodology and theoretical context, as well as explaining its contribution to the state of current knowledge.

The final part of this chapter outlines the structure of the research project and the boundaries within which it sits.

1.1 Overview

This thesis is a study of the way in which the Royal Dutch Shell Group has positioned itself in the changing global economy that has developed as a result of the debate over the challenges posed by climate change.

Shell is one of the world's largest oil companies and a major player in the international energy industry, an industry that plays a vital part in the operation of the global economy, and our day to day lives. It is also an industry that is currently recognised as being environmentally unsustainable because of the amount of carbon dioxide that is released to the atmosphere as a result of the consumption of its products.

This thesis analyses the ways in which Shell has reacted to a growing realisation of this dichotomy. It analyses the reasons behind Shell's reactions, and why those reactions have differed from the norms of the fossil fuel industry.

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Structure of thesis

This chapter is followed by a review of literature relevant to this study. The literature review looks at factors such as structure and organisational culture, historical factors, responses to public discourse and national policies and the roles played by key individuals.

The third chapter is a discussion of the methodology used; it looks at what data was required to answer the research question and how it was collected, along with methods of data analysis and ethical issues that arose.

Chapter four presents the data using extracts from the primary and secondary data that was gathered. Following that is a discussion chapter that relates the findings from the data analysis back to the literature review in chapter three.

The final chapter is a conclusion to the thesis.

1.2 The research question

In the late 1980's and early 90's climate change started to become an issue of increasing importance and growing public concern. An improving scientific understanding of the atmosphere and a number of extreme weather events led to greater public debate over man's impact on the global environment and increasing calls for action to reduce these impacts. These calls inevitably drew attention to the fossil fuel industry, and particularly large oil companies. As large and visible contributors to greenhouse gas emissions, their legitimacy began to be questioned.

When an industry finds itself the target of sustained criticism it has two options. It can either defend itself and fight the criticism, or it can acknowledge it and try to address the issue. These two contrasting strategies are referred to as 'Buffering and Bridging' by van der Bosch and van der Riel (1998). In this case the oil industry as a whole took buffering actions, sought to deny the significance of the evidence of climate change and emphasise the scientific uncertainty over man's contribution to it. There are striking similarities between the reactions of the oil industry and those of the tobacco (Gore 1997) and CFC industries (Grundmann 2001) when faced with similar crises.

In 1989 an organisation called the Global Climate Coalition was formed to lobby against action intended to combat climate change. Among its members were the major oil companies, including Shell. Their campaigning was particularly strong just before and during the Kyoto negotiations in 1997, and drew much criticism, in particular from environmental non-governmental organisations.

Around that time Shell began to voice concern about the position of the Global Climate Coalition, and made statements that were supportive of the Kyoto negotiations. Just after the Kyoto treaty was signed Shell formally left the Global Climate Coalition and announced that it supported targets for reductions in carbon dioxide emissions. Several key individuals at Shell publicly stated that they thought the organisation should be an active player in finding solutions to climate change. In this instance Shell had chosen an un-forced course of action that ran contrary to the norms of the oil industry and went beyond what it was obliged to

do. The question is why Shell's decision making process led to this unexpected course of action.   .

The way that Shell chose to position itself was, at the time, at odds with the accepted norms in the rest of the oil industry, the only other major company making similar moves was BP. The point of particular interest is that in acknowledging climate change and accepting the need for cuts in carbon dioxide emissions, Shell was admitting that it could no longer carry on with 'business as usual'. This was a course of action that could potentially threaten its core business. In openly admitting this, it meant that Shell was not just admitting that it would have to address the way it did business, but was implying that it may potentially have to fundamentally reconsider the type of business it was involved in.

Skjærseth and Skodvin sum up the question: "the oil industry earns its livelihood from oil, natural gas and coal - the main sources of emissions of greenhouse gases - and will be severely affected by regulatory measures to curb greenhouse gas emissions. [...] The business opportunities and challenges offered by the problem of climate change would thus apparently be the same for large oil companies. This would imply, however, that the climate strategy of each individual oil company also would be the same. The striking differences in the climate strategies [of certain] oil companies thus represent a puzzle" (Skjærseth and Skodvin 2001 p43).

This research seeks to analyse this apparently dissonant position taken by Shell. It takes the form of a case study analysing the development of Shell's strategy towards climate change and the reason it positioned itself the way it did in the emerging debate.

This research project looks at why Shell decided to put itself at odds with the industry norms at this particular time. It studies what led to the change in Shell's policy, and whether it was part of a gradual change in perceptions within the company, or a step change in policy. It also explores the role played by key individuals within the organisation.

1.3 Why this question?

1.3.1 Why study climate change?

There have been concerns about man's impact on the environment since before the industrial revolution, but many of today's concerns started to take shape in the 1960's and 70's.

The potential for human activity to have a serious impact on global climate was officially acknowledged with the formation, by the United Nations, of the Intergovernmental Panel on Climate Change (IPCC) in 1988. Since then there has been growing evidence of climate change, in the form of extreme weather events, changes in ocean currents and temperatures, melting glaciers and ice caps, and rising sea levels. It was generally agreed that human activity was making a significant contribution to this through emissions of greenhouse gasses. As a result of these concerns over climate change the Kyoto Protocol was signed in 1997, this committed the developed countries who signed it to reduce their emissions of greenhouse gasses.

Since the time of signing, scientists have become increasingly certain that man's activities are making a significant contribution to climate change. They have also been giving stronger warnings of the seriousness of the impact of climate change, both on the wellbeing of humans and wider ecosystems.

The growth in scientific discussion and concern has led to a corresponding increase in public debate; this has been particularly evident in the media coverage of the subject. Extreme weather events, record temperatures, floods and water shortages, and the disruption of natural ecosystems are now regular news stories, and are regularly linked to climate change.

This increase in public debate has led to increased scrutiny of companies which are perceived as contributing to climate change, this has in turn forced companies to consider what responses to make, and how to position themselves within the debate.

Hoffman and Ventresca discussed this in the more general terms of environmentalism, but their words are equally applicable to the specific issue of climate change. "Over a decades-long process, that included changes in influential actors, the redefinition of the roles of government, the rise of related social movements, court battles and legislative activity, and much public attention, environmentalism has emerged as a routine strategic consideration of major corporations" (Hoffman and Ventresca 2002 p2).

A final reason why climate change is an important subject for study is that although there is widespread scientific evidence that mankind is contributing to global climate change, there appear to be no easy solutions or even a real consensus on what practical measures should be taken to tackle the problem. This means that organisations have not had meaningful political or regulatory frameworks within which to make long term decisions, making it particularly difficult for organisations to position themselves in this debate.

1.3.2 Why the fossil fuel industry?

A high proportion of the greenhouse gasses mankind produces come from energy consumption, particularly from the burning of fossil fuels. An obvious implication of setting targets for the reduction of greenhouse gas emissions would be that we should consider reducing our consumption of fossil fuels. This would inevitably have significant consequences for the industry. The greenhouse gas emissions from the large scale consumption of fossil fuels has had particular consequences for the major oil companies which have a high public profile and have therefore found themselves the focus of public scrutiny. These organisations are also among the largest in the world and therefore have the potential to make globally significant investments, and therefore significant reductions in greenhouse gas emissions.

These companies therefore had to decide how to react. The choice was either to reject the claim that human activity was making a significant contribution to climate change, and therefore reject the Kyoto treaty and reductions in greenhouse gas emissions, or to accept it and the implications that calls for reductions in greenhouse gas emissions would have on their businesses. This is a case where

environmental issues have the potential to bring about a paradigm change within an industry as a whole.

As Leggett put it: "like the tobacco industry before them, when faced with evidence of the ruinous impact of their product, the carbon industries choice was stark: denial, obfuscation - and worse - on the one hand or openly embrace a paradigm shift in their core business on the other" (Leggett 2000 p9).

An added factor is that investment time scales are relatively long in the energy industry; companies therefore have to take a long term view, to make effective financial decisions. This means that they have to anticipate further ahead than many industries. They have to take into account the scientific evidence for climate change and the technical opportunities for solutions, as well as developments in the public dialogue and government policy. They may have to make decisions for the long term but be constrained by the short term contexts and discourses.

The subject is also of key interest because energy supply is of paramount importance to the world as a whole: virtually everything we consume on a daily basis is dependent on the use of energy. Fossil fuel, in the form of oil and coal, has been the most important source of energy for since the industrial revolution in the early 1800s. Modern society depends on oil for 40% of the world's commercial energy, and over 90% of transport energy (ODAC 2003).

Burning fossil fuel generally releases carbon dioxide to the atmosphere; increasing energy demand has meant that ever greater quantities of fossil fuels are being consumed. A potential consequence of forced reductions in greenhouse gas emissions would be a requirement to reduce our energy consumption or make a step change in technology to a move towards low carbon energy generation. In Western countries in particular, we are completely dependent on energy consumption to maintain our lifestyle.

IPCC models suggest that "even if global emissions of carbon dioxide were stabilised at current levels, its atmospheric concentration would still continue to grow [...] global carbon dioxide emissions would have to be more than halved from current levels to stabilize concentrations, compared with a projected doubling

of global emissions over the next few decades in the absence of controls. This underlines the sheer scale of the policy challenge" (Grubb et al 1999 p10).

1.3.3 Why Shell?

In contrast to much of the fossil fuel industry, Shell decided on a policy of acknowledging and addressing climate change as a serious issue, even before the Kyoto Treaty had been signed. The key question is why Shell decided to position itself the way it did, putting itself at odds with most of the rest of the industry? Why it made the policy decisions it did, which by implication would raise questions over its core business?

Shell is also of particular interest because it has an American division whose position on climate change has at times diverged from that of the European parts of the company. Skodvin & Skjærseth said in 2001 that "Shell Oil in Houston [...] is not enthusiastic about the company's common position on the climate issue. Shell London is currently scrambling to unite the viewpoints of the company's European and American branches" (Skodvin & Skjærseth 2001 p103). These national differences in different parts of an international organisation make it a particularly interesting case to study.

Shell claim that they made the first major public statement on climate change, which predated BP chief executive Lord Browne's seminal speech in Stanford in early 1997. Since then Shell has taken a more consistent, coherent path and appears to have a longer term vision. Shell was also the only major oil company to be a founding member of the Business Council for Sustainable Development, set up in the run up to the Rio Earth summit in 1992.

BP made a particularly public display in the early days with initiatives such as Beyond Petroleum but has since then backtracked to some degree. "BP has invested far more in acquiring other oil companies and building its gas position than in renewables. It has also become less outspoken on the issue" (Levy & Kolk 2002 p297).

1.4 Tackling the research question

1.4.1 Theoretical Perspective

This research is a study of how and why an organisation's policies have changed as a result of changes in its external environment. It takes a broadly new institutional perspective but views the institutional environment as being dynamic, responsive and socially constructed. Institutions are constructed and reconstructed and influenced by individuals' ideas and perceptions. It rejects the determinism which early institutional theory tended to imply.

This research takes the position that the decisions individuals make will be the product of institutional forces, the actions of partially informed, imperfect, opinionated decision makers with preconceived opinions and biases, although some may have the appearance of being based on considered and carefully thought out cost benefit analysis.

A criticism of much research into organisational strategy is that it is "often static, cross-sectional, and seldom involves any significant evolutionary perspective". "Case studies are typically wrapped around an explicit or implicit acceptance of a normative, rational model of organisational decision making" (Smircich & Stubbart 1985 p734). This research aims to break out of that mould by taking a more interpretive stance. It analyses the historical context and the institutional environment and actors' views of these factors. The research considers the culture and structure of the organisation as well as events in Shell's recent and more distant past that may influence the decision making process. It discusses key events and how a combination of events at a particular time led to a particular outcome through a process of path dependency.

This thesis is similar to Prakash's work on companies which take actions that go beyond compliance with environmental regulations (Prakash 2000). It is a study of an organisation that went beyond what it was obliged to do, and one that aims to understand the organisation's actions by studying individuals, and their actions and relations, rather than taking a classical economic view of the organisation as a profit maximising entity.

1.4.2 Methodology

This research takes the form of a single case study a methodology described by Yin (1993 p33). The aim is an in-depth understanding of the actions of a single organisation, rather than a comparative study of a number of organisations. The data gathered is largely qualitative in nature, with a combination of semi-structured interviews with key individuals, and secondary data available from archive sources.

The key sources of primary data were interviews with current and former Shell employees. Secondary data was gathered from Shell's archives of speeches and publications, other Shell reports and documents as well as media reports, contemporary and historical interviews and newspaper articles.

The research did not start with a detailed hypothesis, or a rigid conceptual model, but built up a picture of the research topic as it progressed. The data analysis moved backward and forward between the data and the theory as it progressed (Maylor & Blackmon 2005 p253).

1.5 Definitions and research boundaries

This research is specifically concerned with climate change, and its impact on the fossil fuel industry. It does not analyse responses to other sustainability issues such as the finite nature of oil and gas reserves, which may also be of importance to the industry. This research is primarily interested in climate change because it is the issue that is most widely publicised, has produced visible changes in organisational policy, and has lead to the formation of a major international organisation, the Intergovernmental Panel on Climate Change (IPCC) and resulted in an international treaty (Kyoto).

Shell is a multinational organisation, until recently run as a joint venture between the British company 'Shell Transport and Trading' and the Dutch company 'Royal Dutch'. An explanation of the company's history and structure is included in chapter four.

This research looks at the activities of one organisation, with reference to the broader institutional environment. The time scale covered is a period of around ten years from the late 1980s to the end of the 1990s. One of the key events was the Kyoto protocol, which was signed in 1997. This research will cover the run up to that event and map the trends developing at that time.

A particular problem has been that the further back one goes, the harder it is to gain access to documents. It is also harder to find individuals who were in key positions at the time, or those who had access to them. When interviewing individuals about a historical issue, their memories are often less precise, the further back one goes.

In terms of geographical boundaries this research is primarily concerned with a company that has British and Dutch roots. It is however recognised that the major oil companies are all multinational organisations operating in a global energy market. Energy supplies and prices are determined in global market places, and few countries or organisations are able to insulate themselves from this. Government policies do vary on a national level, with notable contrasts between the United States and Europe. The European Union has to some extent

harmonised policies across Europe, and global initiatives such as the Kyoto protocol have effects that are felt on a supra-national level.

Chapter 2

Literature Review

The literature review discusses path dependency as an overarching theory to explain how individual factors influence the position an organisation takes.

These include organisational factors including the structure, culture and decision making processes, economic factors including the balance between long and short term planning, the risks and benefits of being a first mover in a changing business environment and the carbon intensity of a company's product portfolio.

Further factors include the way in which organisations respond to public discourse, increasing pressures from different groups of stakeholders and a desire to maintain legitimacy, as well as the way in which national policies and regulations influence companies which are based in, or have historical roots in particular countries. The final factor considered is the roles that key individuals play, particularly in the context of leadership within an organisation.

2.1 Introduction

The literature review serves two purposes. The first is to show how the thesis fits in with existing research and the ways in which it adds to work that has been done before. The second is to aid the analysis of the data collected and to help provide an answer to the research question.

The aim of this thesis is to build up a picture of the way in which Shell's position on climate change developed, using a range of data sources. It was felt that a full explanation would require the consideration of a variety of potential explanatory factors. The emphasis is on describing Shell's position on climate change with reference to a range of explanatory factors rather than attempting to isolate an individual factor as the key source of influence. The literature review is therefore divided into a number of sections, each describing the potential influence of a particular contributing factor.

It was felt important to focus on literature specific to this case because of the unique nature of the industry. The major oil companies are among the largest organisations in the world and they provide products that are essential to the global economy. As a result the companies have an unprecedented level of influence. The oil industry is also unusual in that the majority of its companies produce a relatively limited range of products that are essentially indistinguishable from those of their competitors.

The initial areas of interest for the literature review were derived from an analysis of Levy and Kolk's (2002) research into the oil industry's response to climate change and Frynas' (2003) research into Shell. They were then developed further with reference to Livesey's (2001) research into Shell's response to public pressure, Lowe and Harris' (1998) work on BP's response to climate change, and Grant's (2003) review of strategic planning in the oil industry. The focus of the literature review then developed further as the data collection progressed and suggested new areas of potential interest.

Key journals such as Business Strategy and the Environment, Corporate Environmental Strategy and the Strategic Management Journal were also

systematically searched for literature that had the potential to illuminate the research question.

2.2 Path dependency

Path dependency is a useful concept to bring to the study of exceptional or deviant cases, such as Shell's policy towards climate change (Mahoney 2000 p508). This is because exceptional cases often depend on contingent events, i.e. a key event that couldn't have been realistically predicted.

Path dependent explanations are divided into two categories, self reinforcing sequences or reactive sequences (Mahoney 2000 p508-9). Self reinforcing sequences are ones where an initial event leads to a course of action where the costs of changing are greater than the benefits. Reactive sequences are ones with a series of events where each one is dependent on the previous ones. A potential issue with this is how to define the starting point for the sequence (Mahoney 2000 p527).

Authors such as Pierson (2000) and Kay (2005) discuss in detail self reinforcing paths that lead to increasing returns to the organisation taking that path. Their writing is focused on political policy making, but is also of use in explaining courses of action taken by commercial organisations. They argue that a small initial event or preference may set in place a course of action that leads to positive feedback, or has self-reinforcing qualities. This leads to a course of action that may not have been initially predictable, and then becomes increasingly difficult to diverge from. They also argue that as a result the timing of events is critical, with earlier events having a more profound influence on overall courses of action than later ones.

This argument is essentially an institutional one (Kay 2005 p555), in that the organisation's institutional environment influences a particular course of action. That particular course then itself becomes institutionalised and becomes increasingly difficult to break out of, even if it becomes apparent that it may be sub-optimal or inefficient (Pierson 2000 p253). The sunk costs are such that the organisation may find it difficult, or impossible, to change course.

Kay argues that to demonstrate that a course of action was path dependent "it is necessary to show that what did not happen could not have happened – that is,

that certain options were not feasible because of earlier sequences of decisions" (Kay 2005 p554). He goes on to say that this is difficult to achieve. One could still argue that a particular course an organisation took would make certain later courses of action more likely and others unsustainable, without having to prove conclusively that a particular course was made impossible.

As with other institutional theories, path dependency theory has been criticised because it implies a deterministic outlook and can have difficulty in providing explanations for change. A counter argument is that historical legacies "constrain rather than determine" current outcomes (Kay 2005 p566) meaning that what happened before provides a different set of options for the future rather than necessarily dictating which option will be taken. This researcher would also like to suggest previous decisions could influence a later course of action taken in response to changes in the external environment. The external changes are therefore the stimulus for the change of course, while the path dependent element restrains, or directs the resulting outcome.

For this thesis the important concept is to understand the fact that one can not explain an organisation's current position, simply as a result of a set of current variables, one has to consider the sequence of historical events to build a full picture. As Kay (2005 p561) points out, this type of analysis tends to produce a deep but non generalisable understanding because it emphasises the unique nature of a particular historical case.

The proposition is that path dependency theory will be useful in explaining the position taken by Shell on climate change. The following sections therefore review the relevant theoretical discussions of contingent factors that may have influenced Shell's position.

2.3 Organisational Factors

This section starts with an overview of strategic planning processes in the oil industry. It then discusses the ways in which attributes specific to the organisation, such as structure, culture and planning processes, influence the position the organisation may take.

2.3.1 Strategic planning in the oil industry

Grant (2003) carried out an empirical study of the strategic planning processes used by eight major oil companies. He sought to argue that contrary to recent literature traditional strategic planning processes are still widely used in major companies. Critics have argued that the "pace of change in the business environment has rendered formalised strategic planning impossible, undesirable, or both" and that they were being replaced by "emergent processes that take account of complexity and permit adaptation through self organisation" (Grant 2003 p1). Grant however argues that the evidence shows that traditional top down strategic planning processes are still the dominant method, and that emergent decentralised planning processes have generally not been widely adopted (Grant 2003 p4).

His research involved interviewing members of the strategic planning team in each oil company, and backing this up with documentary evidence (Grant 2003 p7). This is a small sample of individuals, but it is triangulated with secondary data. Grant acknowledges that there are different amounts of data available for the different companies as some are more open than others. The study is intended as a comparative study, but offers valuable insights into Shell's planning processes.

Grant's research appears to show that over time strategic planning at Shell has become less about bureaucratic control and more a mechanism for coordination and improved decision making. "A critical aspect of the strategic planning system in the oil companies was providing a structured process for dialogue and agreement that could permit more effective coordination over the strategic direction, and periodic redirections, of the companies" (Grant 2003 p14). Companies with more decentralised management tended to emphasise the

coordinating aspect of the strategic planning process "thus Shell with close to 200 operating companies had always regarded its strategic planning process as primarily a vehicle for coordination and consensus in a far-flung business empire" (Grant 2003 p14).

Strategic planning has also become a method for disseminating information and management techniques throughout the organisation. "Shell has placed particular weight on the organisational learning aspects of its strategic planning system, [it] has focused primarily on the use of scenarios as vehicles for exchanging ideas about the future" (Grant 2003 p15).

2.3.2 Organisational Structure (of Shell)

It would seem reasonable to suggest that the structure of the organisation will affect the processes of communication and decision making, and therefore influence the organisation's performance and position.

However Dalton, Todor, Spandolini, Fielding and Porter (1980) in a review of existing literature found that there was little evidence of strong links between organisational structure and performance. The variable of most interest to this thesis was the extent to which centralisation affected performance. The authors suggested that more centralised organisations tend to have a lower level of performance (Dalton at al. 1980 p59). They acknowledge however that the link was not conclusive and that it may be dependent on the types of work being done by the individuals and organisations involved. It was also notable that performance was generally measured in terms of profitability, and while this is valuable quantitative evidence it does not provide a qualitative insight into the actions and processes occurring within the organisation.

Much of the early literature on structure and strategy (Caves 1980; Stopford & Wells 1972; Egelhoff 1998) is focused on the premise that an organisation's structure would be determined by its strategic response to the environment it was operating in, rather than the other way round. This view is epitomised by Chandler's seminal (1962) work: Strategy and Structure, updated in 1995, which

proposed an essentially linear relationship, with an organisation's structure as being very much determined by its strategy (Chandler 1995).

More recent work, such as Engdahl, Keating and Aupperle (2000) acknowledge that strategy does not influence structure in a one way relationship, but that each may influence the other, and it is "in reality a two-way causal relationship and that existing organisational structure has high potential for biasing future [decision making]" (Engdahl et al. 2000 p21). They go on to say that the structure of an organisation "has a significant impact on strategy formulation due to information gathering and processing effects imposed by the structure itself" (Engdahl et al. 2000 p22) and that structure imposes "limits on information flows, data interpretation and boundaries on rationality" (Engdahl et al. 2000 p24).

It would seem a reasonable suggestion that there is a link between the structure of an organisation and the way in which information about its external environment is gathered and used in the strategic planning process. Engdahl et al. do not however cite any empirical evidence to back this up and they also acknowledge that although structure may be significant, it is likely that "numerous other factors influence an organisation's performance" (Engdahl et al. 2000 p24). Many of these factors may be more influential than organisational structure.

The conclusion is that there is likely to be some relationship between structure and strategy, but it may not be a strong one, and will not be linear and one-directional as suggested by Chandler (1995). It is more likely to be a complex one with many other factors involved, most importantly the organisation's external environment. Engdahl et al. suggest that the researcher should therefore concentrate on the organisation's external environment rather than its internal processes (Engdahl et al. 2000 p28). This may be a valid comment, but is not helpful for a thesis seeking to analyse the behaviour of an organisation that acted differently to others operating in essentially similar environments.

Most of the research discussed above seems to assume that senior managers in organisations are free to structure their organisations and their planning processes as they wish. It seems to ignore the historical context, the fact that individuals will be inheriting organisations with characteristics and structures in place from

previous generations of management operating in former market conditions. Individuals, or groups of individuals, will only have limited power to influence structures and decision making processes, and organisational inertia will mean that any intended changes are likely to lag behind changes in the external environment.

Skjærseth and Skodvin (2001), and Frynas (2003) commented that Shell was notable for the complexity of its decentralized structure. They explained that because it operated as a joint venture it didn't even have a single corporate headquarters; its management was divided between offices in London and The Hague (Skjærseth & Skodvin 2001 p53; Frynas 2003 p275).

Oechsle and Henderson (2000) say that because of Shell's unique management structure the organisation tended "to make fewer mistakes, but [...] also tended to make fewer decisions" (Oechsle & Henderson 2000 p75). Frynas echoes this opinion: "unlike many large corporations such as British Petroleum where one person at the top can decisively change the direction of the organisation Shell has developed a more collective decision making process" (Frynas 2003 p277).

It is reasonable to argue that a result of Shell's unique structure is that although the decision making process may have more inertia, it will be more considered and less extreme, a range of individuals will bring in more diverse perspectives and that the final decisions will be more clearly thought out and more robust. It may also be the case that a more consensual decision making process tends to be more conservative but that it will be more consistent over time. As Shell is managed by a committee there are also less likely to be sudden changes in direction as individual members come and go. A change to the chair of the committee is much less likely to bring about sudden changes in policy than the arrival of a new chief executive might in other companies.

Structure and culture

Andrews (1994) argued that structure and culture are essentially inseparable; this is reinforced by Barney (1986) who states that recent developments in views on organisational culture "blur classical distinctions between an organisation's culture

and its structure and strategy" (Barney 1986 p657). Barney goes on to argue that particular types of organisational culture can lead to sustained performance advantages.

Organizational culture can be defined as a "complex set of values, beliefs, assumptions, and symbols that define the way in which a firm conducts its business" (Barney 1986 p657).

Barney argues that a "firm's culture not only defines who its relevant employees, customers, suppliers, and competitors are, but it also defines how a firm will interact with these key actors" (Barney 1986 p657). By implication, the firm's culture will also define its relevant external stakeholders and how it interacts with them, and also how it reacts to factors such as public pressure and government policy. This will in turn influence the way in which it reacts to emerging threats to its operation. As with its structure, Shell's organisational culture may therefore have played a part in the way it reacted to the emergence of climate change as an important issue.

Individuals vs. Structure and Culture in Leadership

Tsui, Zhang, Wang, Xin and Wu (2006) consider the relative influence on an organisation of its leadership behaviour and organisational culture and structure. This study was carried out in China, so some care must be taken when applying it to Western or multi-national organisations. It does however still provide a useful insight into this topic.

Tsui et al. (2006) suggest that a strong organisational culture or explicit procedures and systems for decision making can be an effective substitute for a charismatic leader. It is therefore possible for a less charismatic leader to be as effective, by shaping the organisation's culture and developing its structure (Tsui et al. 2006 p128-29). This is of course not a linear, one way process, as the outlooks and actions of a chief executive will be shaped by the organisation's culture and structures, especially if they have been working within the organisation for a long period of time.

As discussed later, it has been argued that the distinctive environmental policies of a company such as BP may have been largely directed by a charismatic chief executive. An organisation without such a leader may still have a distinctive position, as a result of a unique culture or structures that have historical roots.

Tsui et al. also emphasise the persistence of organisational culture and the fact that local or national norms may have a significant influence on the culture of the organisation (Tsui et al. 2006 p133). It is likely that an organisation's history will have had an influence on its contemporary culture and that American and European based companies may have differing cultural perspectives on issues such as those surrounding environmental sustainability.

2.3.3 Planning and decision making processes

Cohen, March and Olsen (1972) constructed the provocatively titled Garbage Can Model. This is essentially an institutional theory, and considers decision making in situations where structures and preferences, or goals, are not clearly defined, where decision making processes are not clearly laid out and decision makers devote varying levels of effort to different problems (Cohen et al. 1972 p1).

The authors state that these assumptions will "describe a portion of almost any organisation's activities, but not all of them" (Cohen et al. 1972 p1). It could be argued that they could be applied to Shell and the issue of climate change, because of the range of views and uncertainty in the public debate, and the lack of clear guidance for organisations as to how best to respond.

The Garbage Can Model argues that the decision making process within an organisation is essentially a process of problems and potential solutions coming together. In this case timing is a key factor, the decision outcome depends on what problems and potential solutions happen to be 'in the can' at any particular time. This can be seen as a path dependency type argument as the order in which events occur is critical and earlier events will dictate which problems and solutions are currently 'in the can'.

In the mid 1990s Shell suffered two crises: the disposal of the Brent Spar and alleged human rights abuses in Nigeria. Changes in management thinking as a result of these events, described in more detail in chapter 4, can be seen as a source of potential solutions 'in the can' waiting for the issue of the Kyoto protocol to come up. When Kyoto became a current issue to be addressed the lessons learnt from Brent Spar and Nigeria were put into practice.

If Nigeria and Brent Spar had not happened or the timing had been different, there would have been a different set of potential solutions waiting to be applied and different outcome would have been reached.

Hoffman and Ventresca (2002) also take an essentially institutional view of organisational behaviour, albeit one that is less chaotic than the Garbage Can Model. They consider that there is generally a more planned and organised decision making process than the Garbage Can Model, but reject the "dichotomy between the influence of the institutional environment and the competitive environment, as corporate perceptions of market trends are themselves subject to institutional construction" (Hoffman & Ventresca, 2002 p173). They recognise "that economic calculations of interests always embody assumptions that are more or less certain and are constructed in broader social contexts" that planning scenarios contain assumptions about many variables that "are shaped by organisational fields and are not stable over time" (Hoffman & Ventresca, 2002 p175-6).

This implies that even if decisions are made using an apparently rational cost - benefit type analysis there will always be elements of the analysis that are dependent on assumptions that are in turn shaped by institutional forces. Shell may have decided its position on climate change based on an analysis of the costs and benefits of different courses of action, but the individuals involved would still have made assumptions about factors such as the strength of public opinion, government policy response and the response of financial markets. These assumptions would have been influenced by institutional factors. In any decision making process institutional factors will always have some degree of influence on the eventual outcomes.

Hoffman and Ventresca (2002) quote Oliver (1997) saying that "uncertainty increases the influence of the institutional environment and reduces the impact of economic and competitive factors" (Hoffman & Ventresca, 2002 p174). Levy and Kolk (2002) also emphasise the importance of institutional factors during periods of uncertainty. In the mid 1990s there was a great deal of uncertainty about climate change and particularly how individuals, organisations and governments should react. This would unavoidably have had an impact on the strategic decision making processes within companies in the fossil fuel industry. One would therefore be led to think that, as well as cost-benefit type analyses, institutional influences would also play a significant part when organisations were deciding how to respond.

Hoffman and Ventresca (2002) are particularly useful when considering why Shell's position differed from the norms in the oil industry. The authors suggest three main reasons for heterogeneity among organisations in a particular field. The first is that the institutional environment is interpreted in the light of the organisations' history, culture and market position, previous experiences and ventures, and this will differ from organisation to organisation. Second, organisations may be influenced by "multiple overlapping institutional fields [for example] industry associations, national cultural and regulatory contexts [which] create divergent pressures", and third that organisational fields can be very diverse and even fragmented, containing a wide range of divergent forces (Hoffman & Ventresca, 2002 p176-7).

The way that Shell responded to climate change has therefore to be seen in the light of its particular history, culture and experiences, the national culture and regulations it is exposed to and other institutions it is influenced by. These will be different to those of seemingly comparable companies in the energy industry.

Hoffman and Ventresca go on to say that even multinational companies show "a remarkably national orientation to their cognitive maps" (Hoffman & Ventresca, 2002 p185), i.e. that they tend to be influenced by the institutions of their home countries. They discuss the contrast between the institutional environment in the United States and Europe. Governance structures in the United Sates, where decision making tends to be adversarial, mean that organisations in contested

policy arenas tend to take more extreme, polarised positions. In Europe decision making tends to be more consensual, which lead to organisations taking less extreme positions.

Hoffman (2001) emphasises the importance of the context and institutional environment that the organisation operates in. He proposes a theory of "dynamic isomorphism" (Hoffman 2001 p175) whereby field level institutions go through periods of stability and change. He suggests that organisations approach isomorphism in periods of stability, but are periodically stimulated to change by field level shifts.

This would appear to be directly applicable to this research, it could be argued that though the 1980s there was relative stability within the oil industry and therefore the positions of the oil majors became increasingly alike. As environmental issues, and particularly climate change, became increasingly prominent through early to mid 1990s companies responded to this field level change in different ways and as a result they became more heterogeneous.

As time has passed and global attitudes towards climate change have tended to become more unified in the early 21st century, the positions of the major oil companies have started to converge and will in time become more homogeneous again.

Scenario planning

Shell claims to be a pioneer and expert in the use of scenario planning (Shell 2004). Since 1971, Shell has explicitly addressed issues of uncertainty in its strategy formulation through scenario planning. Shell's own literature claims that the extensive use of scenario planning is based on the belief that "the only competitive advantage the company of the future will have is its managers' ability to learn faster than their competitors" (Shell 2006).

As discussed previously an organisation's structure can influence its strategy by virtue of the way in which it influences data gathering (Engdahl et al. 2000 p22). The use of this formalised scenario planning process within strategic planning is a clear example of a way in which organisational structures influence data gathering.

"The scenario approach enables a continual assessment of trends and developments that may affect its business in the future" (Skjærseth & Skodvin 2001 p53). The use of scenario planning means that there is a systematic analysis of developing trends and potential areas of concern for the organisation. This proactive approach means that potential issues should be recognised earlier on, and certainly before they actually start to impact on the organisation.

The creation of a set of scenarios means that a range of alternatives will be considered and potential responses analysed. This should lead to more robust strategic planning than simply trying to predict the way in which the external environment will develop, and then planning how to respond. Wright (2004) claims that the use of scenario planning resulted in Shell "having considered and rehearsed its responses to the 1973 oil crisis and price collapse of 1981 before these events happened" (Wright 2004 p6).

Grant (2003) explains that "although all the [major oil] companies used scenario analysis to some extent, only Shell utilises scenarios as the foundation and centrepiece of its strategic planning process. Other companies tend to use scenarios as a compliment and balance to their forecasting exercises, or to explore particular issues" (Grant 2003 p17).

This would imply that at Shell, when a new potential threat to business arose, such as climate change, the organisation would pick up the issue earlier and consider the ways in which it could have an impact. Factors such as how governments and other organisations may react, and how the public would respond, should have been considered. It is likely that there would be more discussion and that there would be input from a wider range of individuals both within and outside the organisation, than in other oil companies. This may mean that the decision making process takes longer, but the organisation would then be better prepared and any decision is likely to be more robust and more widely supported throughout the organisation.

A secondary consequence of being a prominent advocate of the scenario planning process is that it has helped to boost Shell's image as a considered, objective

strategic thinker. This has enhanced its reputation and given it an opportunity to influence the wider policy debate (Davis 2002 p6-7; Cornelius 2005).

From a theoretical point of view, the language Shell uses in its literature tends to imply a distance between the planner and the scenario; it gives a sense of objectivity and legitimacy (Wright 2004 p9). It is portrayed as a positivistic methodology that assumes a world that is out there to be discovered, rather than alternative realities that are created. This echoes Schwartz & Gibb (1999) who essentially saw Shell's planning process as being geared towards solving technical problems.

The language used in Shell's scenario planning gives the impression that it is very much about responding to changes in the external environment. It ignores the fact that Shell is part of the environment, and can, to some extent, influence the ways in which that environment develops. This is essentially the concept of agency: that is the degree to which those within Shell actively try to 'shape the future' or whether they simply fit their strategy to something which they perceive as essentially out of their control.

In conclusion, Shell's use of scenarios may have had a significant influence on its planning process, but it will of course have interacted with other factors such as individuals' leadership, the organisational culture, and national discourses which will together have led the organisation to the position it took on climate change.

Organisational Learning
The use of scenario planning means the structured discussion of potential futures and possible responses, the aim of which is to develop a more systematic approach to organisational learning. There is a large body of literature on organisational learning from Argyris and Schon's (1978) publication 'Organisational learning: A Theory in Action Perspective' and Hayes, Wheelwright and Clark's (1988) 'Dynamic Manufacturing: Creating the Learning Organisation' through to Senge's (1990) seminal work 'The Fifth Discipline'.

Much of the organisational learning field stems from earlier work by authors such

as Cyert and March's (1963) work on the ways in which organisations adapt to change, and the fact that most organisational behaviour is based on routine (Levitt & March 1988 p517). In particular Denton (1998) argued that "organisational learning was really about the process of adaptation, and that adaptation is a key part of strategic decision making" (Denton 1998 p18).

Lindbolm (1959) discussed the fact that the actions of organisations are dependent on historical factors, and that their interpretation is also important to understanding these actions. Pettigrew was also instrumental in the development of organisational learning, and integrating it with other areas or organisational behaviour, especially in his seminal work, the 1985 study of ICI entitled 'The Awakening Giant'.

While not wishing to be diverted by an in-depth analysis of organisational learning literature there are areas of relevance to the development of Shell's position on climate change. Grant (2003) discusses the way in which Shell's strategic planning process has also become a method for gathering information and disseminating it throughout the organisation. "Shell has placed particular weight on the organisational learning aspects of its strategic planning system [its use of scenarios] has focused primarily on the use of scenarios as vehicles for exchanging ideas about the future [this brings together] multiple types of expertise from both within and outside the Shell group" (Grant 2003 p15).

The social construction of the organisation's environment
An organisation's strategic planning process, as described in the previous section, is principally involved in shaping the organisation's responses to a changing external environment. Understanding the way in which that external environment is perceived is therefore important to understanding the strategic plans that are then made.

An organisation's external environment is often seen as a definite entity that can be analysed and responded to in a rational manner. "Managers prefer consciously or unconsciously to operate in a positivist mode" (Wright 2004 p13). Wright however suggests that a more realistic view is that the organisation's

environment is essentially a construct, created by the individuals involved. Even if the organisation has an apparently rational, positivistic methodology for analysing its environment, it will still be analysing the environment as it perceives it.

Organisations "continually interact with their environment; their interpretations shape the environment more than the environment shapes them" (Wright 2004 p8). Wright suggests that the organisation itself will influence the environment within which it exists; it will then interpret that environment in ways which are dependent on the context and the experience of those involved. The environment is dynamic, it is constantly being constructed and reconstructed; it is not a static entity set in stone. Planners must acknowledge "that by their behaviours and actions they will influence whatever futures are created" (Wright 2004 p8).

On this basis one can argue that the organisation will emphasise the importance of those areas of the environment that it sees as being significant. This will depend on the views, values, beliefs and previous experiences of the individuals involved. It will be influenced by the internal organisational culture, and a similarly socially constructed historical narrative of the organisations existence. The organisation's (socially constructed) internal and external environments are constantly interacting, influencing one another in a dynamic, fluid manner.

Smircich and Stubbart (1985) similarly discuss organisations' relationships with their environment, and the influence this has on their strategic management. They develop a model of an enacted environment, which maintains that "organisation and environment are created together (enacted) through the social interpretation process of key organisational participants" (Smircich & Stubbart 1985 p726). Organisations and their environments are simply labels for patterns of activity. The organisation is differentiated from the environment purely by "processes of action and attention" by the organisational members (Smircich & Stubbart 1985 p726). The concept of the organisation and its environment, and their essence, is a construct which is maintained simply because individuals act in certain ways and interpret their actions, and those of others, in ways that maintain those concepts and essences.

Smircich and Stubbart's theories offer a revealing perspective on the nature of strategic planning. They suggest that it is not possible for an organisation's analysis of its environment, and by extension its internal capabilities, to be independent of the individuals doing the analysis (Smircich & Stubbart 1985 p729). These individuals will inevitably be influenced by the structures and cultures within which they work. A particular set of structures and cultures within an organisation will therefore tend to lead towards a particular analysis of the organisation's environment, and by implication the most effective way it can react towards the environment.

2.3.4 Historical factors

Barney (1996) discussed the influence that historical factors have on a firm's culture that can lead to particular strategies and courses of action. He cites Pettigrew (1979), Selznick (1957) and Clark (1970 & 1972) in arguing that the unique conditions surrounding every organisation's origin and development influences its present day actions. He argues that the personalities of the organisation's founder can also leave an imprint that influences culture and hence actions, citing Schein (1983).

More recently, work by March & Olsen (2005) also suggests that the history of an organisation can lead to a collective memory and organisational culture which will influence judgements about what is appropriate. If an individual's identity is to some extent defined by the organisation they work in, what they see as appropriate will be influenced by the history, collective memory and culture of the organisation they are working in. The more strongly they identify with the organisation the more likely they are to abide by what is seen as appropriate according to the culture of the organisation. Older, more established organisations have more history to draw upon, which may therefore tend to lead to a stronger sense of what are appropriate actions (March & Olsen 2005). Historical influences could therefore be said to be more strongly institutionalised. If Shell is a long established organisation with strong cultural values it is likely that individuals within that organisation will feel it as a powerful influence.

Discussing an issue that relates more specifically to environmental sustainability, Levy and Kolk (2002) claim that Exxon has been deterred from diversifying into renewable energy because of negative historical experiences. Exxon "lost more than $500 million on renewables, and learnt a lot of lessons" in the late 1970s and early 80s (Levy & Kolk 2002 p290). They went on to suggest that European companies such as Shell lacked this experience and were therefore now less reluctant to invest in renewable energy.

Some of these historical factors, and other issues discussed later such as responses to public discourses, can be seen as early events in a path dependent sequence of decision making. The early decision by Exxon to move into renewable energy that led to substantial financial losses, coupled with a corporate culture based on the principles of the founder emphasising that primacy of profitability, may have made a later decision to invest in renewable energy a virtually impossible route for the organisation to contemplate. Without the option of investing in renewable energy the company would have found it much harder to adopt a position supporting controls on greenhouse gas emissions.

2.4 Economic Factors

This section looks at the differences between organisations' long and short term outlooks and the risks and benefits of being a first mover in a particular industry.

2.4.1 Long and short term planning and profit motivation

O'Regan and Ghobadian (2004) argue that different factors affect long and short term performance and that the two are not necessarily directly compatible. Their study suggests that long term performance is more likely to be associated with organisations whose strategic planning and culture is externally orientated and emphasises creativity and human resources. Short term performance is more likely to be associated with an internal orientation, and an emphasis on control within the organisation (O'Regan & Ghobadian 2004 p419).

A study of an organisation's management and culture may therefore give an indication of whether the emphasis is likely to be on long or short term performance. For a fossil fuel company, an emphasis on long term performance is likely to be indicated by an interest in diversification and investment in renewable energy, while short term performance would be indicated by maximising the output from existing fossil fuel interests.

O'Regan and Ghobadian's study is of small and medium size companies, but still has some useful insights that are relevant to larger corporations, it is also specifically of technology based manufacturing companies, rather than service industries, which makes them more comparable with the organisation being studied in this thesis. A weakness of O'Regan and Ghobadian's study is that it is based on statistical analysis of a sample of companies, but there is little discussion of the mechanisms that may be driving the factors discussed.

In his comparative study of oil companies' strategic planning, Grant (2003) found that all the companies studied recognised the problems involved in balancing long term and short term goals. They "recognized that annual performance plans that focussed on short-term profit maximisation were unlikely to achieve long-term profit maximisation or maximisation of shareholder value" (Grant 2003 p19).

Frynas (2003) also argued that Shell's investment in renewable energy wasn't simply an effort to improve its image, "it had a very clear commercial rationale. Shell came to recognise the enormous profit potential of the new technologies [...] this market is expected to be worth billions in the decades to come, and Shell wants to have a big slice of the cake" (Frynas 2003 p281).

Prakash (2000) carried out research on why some companies adopt certain environmental policies that go beyond what is required by law and cannot be shown to be immediately profitable. He found that in some cases individuals wishing to promote a particular position used perceived long term benefits as an incentive to justify short term costs, even though the benefits could not be easily quantified in financial terms (Prakash 2000 p33).

Time horizons

In his study of the major oil companies Grant (2003) argues that traditional strategic planning was focused on predicting and reacting to changes in the price of oil. However the oil price shocks of the mid and late seventies led to a new environment in which "the companies could neither forecast prices or demand" (Grant 2003 p8). This led to an overall emphasis on shorter term planning, less focus on long term growth and more emphasis on "squeezing increased profitability from mature, slow growth (or no growth) businesses" (Grant 2003 p9).

The paradox is that in the 1990s oil companies were making investment decisions in "an environment where forecasting was all-but-impossible" on projects that may take a decade to start generating income and have "life spans extending for 30 years or more" (Grant 2003 p7).

2.4.2 First mover risks & benefits

An oil company that perceived benefits in being a first mover into renewable energy may have been more supportive of calls to limit greenhouse gas emissions. Lieberman and Montgomery (1998) discuss the potential risks and benefits of being a first mover in an emerging market and what factors are likely to determine successful first movers.

The greatest risk that early entrants to an emerging market face is that they may invest time and resources in areas that turn out not to be the most advantageous in the long run (Lieberman & Montgomery 1998 p1112). For example if Shell wanted to diversify into renewable energy before the market was well developed it would be taking a risk in attempting to identify which technologies would eventually turn out to be most viable. This may be a particular problem when the key technologies require expensive and time consuming development at a time well before they become commercially viable, and at a time where governments are not giving a strong lead as to the ways in which policies may be applied to the market. The problem is however more complex than it may at first appear because large investments in an emerging market may alter the course of the market development to the advantage of the investor.

Being a first mover may also give the organisation added credibility with policy makers, and a resulting ability to influence policy making. A key advantage of being a first mover is that the company can also shape public perceptions and preferences (Lieberman & Montgomery 1998 p1113). If Shell, for example, was generally perceived as being a pioneer in the field of sustainable energy they may attract more custom for their products and incur less criticism from environmental campaigners. The risk is that they may be accused of green washing: that is simply paying lip service to the environmental issues in order to improve their image and deflect criticism.

Lieberman and Montgomery suggest that companies with innovative research and development capabilities are more likely to benefit from early entry, whereas companies with expertise biased towards manufacturing and marketing may benefit from waiting until the market has become more established (Lieberman & Montgomery 1998 p1113).

There are other variables suggested, such as how established the company is in the market and threats to existing core products (Lieberman & Montgomery 1998 p1114-5) but these are unlikely to be relevant because of the similar positions of Shell and the other major oil companies. The significance of market share has also been widely studied but again would seem not to be significant as Shell and

Exxon have similar market shares, but apparently different attitudes towards climate change and diversifying into sustainable energy.

Lieberman and Montgomery reviewed current research on the potential advantages and disadvantages of being a first mover and the consequences of moving, but they do not consider why the organisation decided to move, or not, at that particular time. The question this thesis seeks to answer is why Shell positioned itself the way it did, and an important point to consider is whether Shell managers perceived that their organisation would have an advantage if the company was a first mover.

Kolk and Levy (2002) contend that "BP, Shell and Texaco expressed the belief that significant first mover advantages might accrue in renewables, but that new competencies would take time to build, so early investments were warranted. For Shell, this approach was a continuation of the company's history of organic, internal growth. Managers thought that Shell's expertise with offshore rigs could be applied to wind energy. The company's scenario planning process emphasized a longer time horizon than Exxon and deliberately set out to incorporate diverse perspectives and challenge conventional thinking" (Levy & Kolk 2002 p292).

Exxon however felt that it would do better to wait and see what other organisations were doing, learn from their mistakes and to see how the market developed. They would then use their financial power to buy into renewable energy once it became sufficiently profitable.

2.4.3 Carbon intensity

Rowlands (2000) hypothesised that companies with a more carbon intensive portfolio of products, and fewer investments in renewable energy, are less likely to be supportive of plans to restrict carbon dioxide emissions, but his evidence did not appear to back this up. He also suggested that companies that operate to a greater extent in the developed world may support carbon dioxide reduction, but this does not appear to hold either. Both the companies he studied had key

markets in the west and developing countries formed a relatively small part of their business (Rowlands 2000 p349).

Skjærseth and Skodvin (2001) suggest that a company which is involved in more carbon intensive energy sources such as coal and oil is more likely to resist policies to restrict carbon emissions than one involved predominantly with less carbon intensive sources such as gas (Skjærseth & Skodvin 2001 p46). Although this may be true, even natural gas still has a significant carbon content and would therefore still be affected by mandatory controls on carbon emissions.

It is apparent that Shell has pursued a policy of decarbonisation "in 1997, Shell announced that the Group's coal assets were under strategic review with the aim of divestment, and the sale was completed in July 2000. Moreover, in October 1997, the Shell Group established a fifth core business, Shell International Renewables" (Skjærseth & Skodvin 2001 p49). This decarbonisation would suggest that Shell was trying to reduce it's exposure to criticism over carbon emissions as well as regulations that may restrict carbon emissions. The theory suggests that Shell would be less likely to oppose restrictions in carbon emissions as the carbon intensity of its products was reduced.

However Skjærseth and Skodvin go on to say the Shell's portfolio of products was not that dissimilar to Exxon's for example, so this would not appear to be a strong indicator of differences in policy (Skjærseth & Skodvin 2001 p51).

2.5 Response to Public Discourse

Public discourse may include general public dialogue that is relevant to the organisation and its operation, or it can be discourse that is focused specifically on the organisation involved. Shell had two such cases of the latter in 1995, when there was extensive negative public debate around its operations in Nigeria and the way it planned to dispose of the Brent Spar oil storage platform. These two events have been the subject of much analysis and discussion.

Skjærseth and Skodvin (2001) claim that "companies with experience of strong public scrutiny are more likely to respond to enhanced public concern for climate change by adopting a proactive climate strategy" (Skjærseth & Skodvin 2001 p46). They go on to argue that companies are more likely to respond to the demands of the society in the country where they have their "historical roots, where they have located their headquarters and concentrated most of their activities, particularly their petroleum product sales which are directly exposed to the public" (Skjærseth & Skodvin 2001 p46).

On this basis one would expect Shell to take a position on climate change that was in line with the public discourse it was exposed to in Europe, and particularly Britain and the Netherlands, the countries where it has is historical roots.

2.5.1 National differences in public opinion

Scientific opinion has generally been relatively unified on the subject of man's influence on the global climate, however public opinion on the subject has varied significantly (Brechin 2003 p106-7). It is reasonable to suggest that companies based in particular countries will to some degree be influenced by national public opinion.

Dunlap (1994) summarises an international survey taken in 1992, in the run up to the Rio Earth Summit and five years before Kyoto. This survey asked question on a wide range of environmental issues including the seriousness of climate change. When comparing the United States with European countries the poll suggested that the public in Germany took climate change most seriously with 73% saying it

was very serious, Great Britain followed with 62%, Denmark 55%, the USA at 47% and the Netherlands at 36% (Dunlap 1994 p119).

Brechin (2003) reviewed a number of international public polls on the significance of climate change. He agreed with Dunlap and also found that the public in general were poorly informed about the main anthropomorphic contributions to climate change (Brechin 2003 p118-21). What was also notable was that in the United States in particular even those who ranked climate change as a serious problem, ranked it considerably lower than other issues such as contaminated drinking water and toxic waste disposal.

Brechin reviewed a study of public reactions to President Bush's rejection of the Kyoto Protocol. He found that over 80% of the public in Britain, Italy, Germany and France disapproved of Bush's actions, while only around 40% of the United States public disapproved (Brechin 2003 p123). Brechin however does not seem to consider that this may be in some part due to the fact that citizens of any country are perhaps less likely to be critical of their own leaders than those of another country. Even having said this, it would appear to be an indicator that the public in Europe are more supportive of actions to combat climate change than the public in the US.

Nisbet and Myers (2007) reviewed the changes in United States public opinion to climate change over the previous twenty years. They found that public awareness of the issue had increased steadily from under half of the population to over 90% (Nisbet & Myers 2007 p3), with around 75% saying they understood the problem fairly well or very well (Nisbet & Myers 2007 p5). However the study showed that even in 2000 over half the population still confused climate change with ozone depletion.

Significantly, in the mid 1990s there was a fall in the number of people who thought that climate change was real. Nisbet and Myers believe that this was due to campaigning by conservative groups "to boost scepticism about the problem" (Nisbet & Myers 2007 p7).

Zehr (2000) backs up Nisbet and Myers' claims about public opinion and offers

some explanation. He argues that scientific uncertainty over climate change was over-emphasised in the media leading to a public perception of scientific knowledge that was at odds with the reality (Zehr 2000 p98-9).

Von Storch and Krauss (2005) studied the differences in reporting of environmental issues in the media in the United States and Germany. They suggest that in Germany events such as flooding and extreme weather are much more readily linked to man made climate change by the media, than they are in the United States (von Storch & Krauss 2005 p100). In contrast to the United States people questioning the evidence for climate change are rarely taken seriously in Germany (von Storch & Krauss 2005 p101).

The differences can be characterised by the fact that in the United States climate change is generally referred to as 'global warming' which is perceived as less threatening than the German term which translates as 'climate catastrophe' (von Storch & Krauss 2005 p101). This study emphasises the importance of cultural traditions in perceptions of the environment, so although it effectively contrasts the United States with Germany one must be careful in extrapolating attitudes in Germany to other European countries where cultural traditions may be subtly different.

Barnard (1996) reinforces this, contrasting the generally pro-environmental attitudes among the public, and businesses, in northern Europe and Scandinavia with the less enthusiastic attitudes in the Mediterranean countries. He names Germany, the Netherlands and Denmark as the greenest countries in Europe (Barnard 1996 p23)

Skjærseth and Skodvin (2001) corroborate this, arguing that a number of studies have indicated that "the Netherlands is among the 'greenest' countries in the world. Until the mid-1990s the environment was regarded as the most important societal problem in the Netherlands" (Skjærseth & Skodvin 2001 p55). They said that a significant proportion of the population was "willing to pay higher prices for environmentally friendly products" or " pay higher taxes, if necessary, for an improved environment and was even willing to accept a lower standard of living". More specifically, Skjærseth and Skodvin claim that this "has led Shell to use the

Netherlands as a testing ground for society's willingness to pay for environmental protection in general, and clean energy in particular" (Skjærseth & Skodvin 2001 p55).

The conclusion from the literature is that the science of climate change was generally accepted in Europe by the mid 1990s and that openly challenging it would have been counterproductive: the debate had moved beyond the science and onto how to address the issue (Hoffman & Ventresca, 2002 p182-4). The implication is that by the mid 1990s companies based in Europe, and especially the Netherlands, would not even have considered publicly questioning whether climate change was a reality. If they had done so, the negative public reaction would have resulted in a clear challenge to their legitimacy.

On this basis one would conclude that a company influenced by European public opinion is more likely to take a pro climate change position than one influenced by United States public opinion.

Legitimacy

Legitimacy and public image is becoming increasingly important as companies come under pressure in the media, particularly from environmental organisations. The oil industry is one where different companies produce a relatively limited range of products that are essentially indistinguishable from those of their competitors. They may therefore seek to differentiate their products by factors other than the simple objective qualities of the product itself. This has particularly been the case with environmental issues. For this reason reputation and legitimacy are used as ways of distinguishing one company's products from another's.

Levy and Kolk (2002) found that managers from European oil companies were particularly concerned about their organisations' perceived legitimacy. "Interviewees from European companies expressed explicit concern for their legitimacy and image. [...] a Shell executive discussed the ramifications of negative publicity following the execution of Ogoni activist Saro Wiwa in Nigeria and the Brent Spar incident: [...] there is a real concern for legitimacy and what the community thinks. There is a fight for the hearts and minds of the public; this is

a long-term force affecting our business" (Levy & Kolk 2002 p290). It is interesting that the individual from Shell saw building legitimacy as a long term goal, rather than a short term public relation exercise.

According to Frynas (2003) it appears as though Shell acted the way it did over climate change because it was considering its reputation and legitimacy among a wider group of stakeholders and was protecting its long term financial future in a changing institutional environment. If the company's sales are dependent in its legitimacy, it is impossible to separate legitimacy and financial considerations.

Livesey (2001) discusses the change in Shell's rhetoric following the incidents involving Brent Spar and Nigeria. She goes on to suggest that the change in the way that Shell expressed itself publicly influenced the way that the organisation viewed itself. She argues that organisations use rhetoric to reach out to their external environment, and this can in turn help the organisation to adapt its internal thinking to the changing external circumstances in a process of reflexivity. The use of particular language in external communications in fact constructs a new reality within the organisation (Livesey 2001 p59).

Livesey claims that Shell's public statements "moved the company from a taken-for-granted discourse of economic development towards a cautious adoption of the language of sustainable development" (Livesey 2001 p59). She emphasises that Shell's crises of the mid 1990's "raised issues of institutional legitimacy" (Livesey 2001 p59).

Livesey argues that there is an evident change in the form of the language used by Shell in the period following Nigeria and Brent Spar. Before and during these incidents Shell's language was characterised by a rationalistic, logical stance. Shell tried to emphasise its technical expertise. It tried to put forward what it perceived as the truth, but lost out to the environmental NGOs "emotion stirring tactics" that were founded on principles and beliefs rather that a dispassionate assessment of the situation (Livesey 2001 p69). The NGOs rhetoric succeeded in portraying Shell as greedy, uncaring and untrustworthy which further served to undermine Shell's attempts to appeal to what the company saw as 'the truth' of the situation (Livesey 2001 p70).

Livesey argues that after Nigeria and Brent Spar Shell first went through a period of denial and blame before recognising that it had issues that it needed to address. "The group undertook extensive market research and stakeholder consultation in 1996 (the year after Nigeria and Brent Spar) to discover how it was perceived and what society expected from it in terms of environmental and social performance. Its reaction to its findings was one of cognitive dissonance: We looked in the mirror and neither recognised or liked some of what we saw. We have set about putting it right" (Livesey 2001 p79).

Following Shell's troubles in Nigeria the statements of Cor Herkstroter, Shell's chief executive at the time, show that senior management recognised that "the institutions of global society [were] being reinvented" and that "modern demands on companies are ... somewhat different to the traditional ones". He talks about the culture at Shell, "most of us at Royal Dutch/Shell come from a scientific, technological background. That type of education, along with our corporate culture teaches us that we must identify a problem, isolate it and then fix it. That sort of approach works well with a physical problem – but is not so useful when we are faced with, say, a human rights issue" (Livesey 2001 p79).

It seems clear that senior managers in Shell realised that there was a lack of public trust in Shell, leading to a loss of legitimacy that could ultimately threaten their profits. It is also clear that events surrounding the Brent Spar and troubles in Nigeria were a critical turning point in Shell's understanding of the need to build its public legitimacy.

Grundmann's (2001) study of the way in which DuPont reacted to calls for restriction of the use of CFCs in the 1980s is in many ways analogous to a study of Shell's position in the 1990s.

In 1986 DuPont gave up its position as one of the most forceful defenders of CFCs, one of the company's main products. Grundmann argues that DuPont wished to be seen to be backing controls on the use of CFCs and leading the way producing alternatives so as to "cultivate the company reputation for acting

particularly responsibly and pursuing first class science" in order to build up their long term reputation with customers (Grundmann 2001 p151).

This is a clear example of an organisation using a response to an environmental issue as a way of promoting its own legitimacy. Interestingly Grundmann also argued that, even if legal restriction were not introduced, the company was worried about being sued in the United States by people who developed skin cancer as a result of environmental damage done by CFCs (Grundmann 2001 p153).

Prakash (2000) carried out research into companies adopting environmental policies that go beyond what is required by law and cannot be shown to be immediately profitable. This research deals with issues surrounding organisational legitimacy, it concentrates on how external factors influence those individuals trying to promote such environmental policies within the organisations.

He argues that some companies feel they need to be seen to be leaders in implementing environmental improvements "if they wish to remain a credible player in the environmental policy discourse" (Prakash 2000 p153).

At the time of Prakash's study there was increasing negative media coverage of industry's indifference to environmental concerns, (Prakash 2000 p67). In the mid 1990s Shell was also under public and media pressure to make changes to their attitudes towards social responsibility and sustainability. Being more environmentally proactive creates "goodwill with regulators, local communities, citizen groups" and the media, and reduces future liabilities (Prakash 2000 p68). Promoters of policies within organisations emphasise the necessity to maintain a good relationship both with regulators so they will be more cooperative or lenient in case of problems and also with the media to promote a positive image and minimise negative stories (Prakash 2000 p78/9). They also argue that if the organisation did not take measures voluntarily, they would have them imposed on them as legal regulations (Prakash 2000 p79).

As well as Shell aiming to improve its public image with its environmental position, its more recent experience of implementing internal carbon trading schemes resulted in it becoming a leading advisor to the European Union when the Union

was designing its carbon trading programme. This meant that the company had inside knowledge and practical experience of how the European scheme was likely to run, before it became mandatory (Dunn 2002 p33).

Buffering or Bridging

Van der Bosch and van der Riel (1998) argue that when confronted with major external threats, an organisation can act in one of two ways. It can either attempt to defend itself from the threat by amplifying "the organization's protective boundaries" in order to prevent "external stakeholders from interfering in internal operations" (van der Bosch & van der Riel 1998 p24), or it can act in ways that "confirm the expectations of external stakeholders [in order to] enhance the security of the organisation in relation to its environment." Safety, survival and an improved bargaining position are seen as the benefits of building relationships with stakeholders (van der Bosch & van der Riel 1998 p24). These two strategies are referred to as buffering and bridging.

It was decided that for this thesis, when looking at strategic decision making, the concepts of bridging and buffering were more useful than the traditional proactive, reactive and passive terminology or the dependent, defensive, offensive, innovative and niche strategies as described by Schot (1992). This was because the concepts of bridging and buffering more specifically encapsulate an organisation's reaction to specific external factors, and encompass the actions of stakeholder groups. This applies to Shell's strategies leading up to Kyoto and its position on the protocol particularly well.

Van der Bosch and van der Riel suggest that three organisational factors influence a firm's choice of buffering or bridging strategies. First, the larger the company is the more likely it is to adopt a buffering strategy; second the more important the resources controlled by the firm are the more likely it is to buffer; third, a firm whose management has a "collaborative, pioneering attitude" is more likely to adopt a bridging strategy (van der Bosch & van der Riel 1998 p25). Shell is amongst the largest companies in the world, and controls a vital resource, which would suggest that it would tend to adopt buffering strategies towards climate change, as companies such as Exxon clearly have. Van der Bosch and van der Riel suggest however that "the attitude of top management towards cooperation

with external stakeholders" is the most important factor (van der Bosch & van der Riel 1998 p26). This implies that the company's strategy will be significantly determined by the personal views and values of the senior management.

External factors are of course also important, van der Bosch and van der Riel suggest that "developments in the business environment that are perceived as threatening" and beyond the organisation's control are likely to encourage an organisation to adopt a bridging strategy (van der Bosch & van der Riel 1998 p25).

It would seem to be the case that the events around Brent Spar and Nigeria were beyond Shell's control. Therefore Shell's management found that they would achieve better results by acting in ways that were appropriate, rather than in ways that would be seen as profit maximising.

As discussed earlier there are again striking similarities between industry's reaction to calls for restriction on the use of CFCs and emissions of greenhouse gasses. As Grundmann (2001) describes, the CFC industry initially tried to take buffering actions, setting up a lobby group called the Alliance for Responsible CFC Policy to campaign against regulations restricting CFC production. As with the oil industry it argued that there was insufficient reliable scientific evidence linking the use of their products to changes in the environment (Grundmann 2001 p143). Again, like the oil industry, there were also allegations that the science was being misrepresented and that scientists were being 'bought' by the pro CFC lobby for their own commercial gains.

In 1986 DuPont broke ranks with the rest of the industry and admitted that CFCs could be a cause for concern and that it would be prudent to limit their use, "contrary to the policy of other producers it hinted that it would be possible to live with regulations because substitutes would then become profitable" (Grundmann 2001 p147/8). As with Shell, it would appear that DuPont's management realised that its position could be seen as inappropriate and become unsustainable so they decided to switch from a buffering to bridging strategy.

The Logic of Appropriateness

March and Olsen (2005) propose that individuals act in accordance with what they feel is appropriate for them in a particular situation. This is determined by the role they are playing in a particular circumstance which will include expectations of what is seen as "natural, rightful, expected and legitimate" (March & Olsen 2005 p3). This is in turn determined by the collective culture and self image of the organisation within which the individual is working.

This is essentially an institutional argument; it is "in contrast to current interpretations of politics that assume self interest and rationally calculating actors" (March & Olsen 2005 p5). It is also important to recognise that this implies that decision making processes are "not primarily connected to the anticipation of future consequences" (March & Olsen 2005 p4), but that actors base their actions on the outcomes of previous actions in similar circumstances.

March and Olsen briefly discuss how actors react in times of change. They say that when existing rules and narratives no longer make sense, "there is a search for new conceptions and legitimations that can produce a more coherent shared account" (March & Olsen 2005 p15/6).

National factors and influences

The Brent Spar crisis graphically demonstrated the differences in position of Shell's different national operating companies. Once the crisis started to impact, Shell companies in Germany and the Netherlands, where public protests were loudest, wanted to stop the sinking of the Brent Spar, while Shell UK, which was responsible for the Brent Spar, was unwilling to back down (van der Bosch & van der Riel 1998 p28).

This would appear to be a direct reaction to public discourse, or lack of it, in the different countries where Shell operates. Shell UK announced "a reversal of its decision to sink the Brent Spar, apparently after having been instructed by the Group's Committee of Managing Directors [senior management] to do so" (Frynas 2003 p278&9).

Zyglidopoulos (2002) looked at the reasons why Shell reversed its decision on the disposal of the Brent Spar platform. His primary finding was that although the disposal was being carried out by Shell UK, and "although it was Greenpeace-UK who started the opposition to the deep-sea disposal of Spar, it was public pressure from Germany, the Netherlands, and Denmark which finally made Shell change its mind" (Zyglidopoulos 2002 p145).

His argument is that because Shell is a multinational organisation a wider range of stakeholders are able to bring direct pressure on the company than would be the case for a national company. This means that the organisation has to take into account the views of a much more diverse range of stakeholders than would otherwise be the case, and that its global operations may be affected by public opinion in individual parts of the world where it has major markets. "The reputation of a multinational corporation, because it transcends national boundaries, can act as an international enforcement mechanism in matters of social and environmental responsibility" (Zyglidopoulos 2002 p146).

2.6 Influence of National Policy and Regulation

This section considers the impacts that national governments' policies and regulations may have on a company's position on climate change.

It looks at the differences in climate change policy and regulations in different countries and in detail at the Netherlands, the country by which Shell is most likely to be influenced.

2.6.1 National policies and organisational responses

Skjærseth and Skodvin (2001) argue that companies' positions on climate change will depend on the strength of national climate policy "in terms of targets and policy instruments [...] a strong climate policy may create pressures and opportunities as well as reducing uncertainty. Ambitious greenhouse gas reduction targets and mandatory policy instruments such as regulation and economic instruments send a clear signal to target groups" (Skjærseth & Skodvin 2001 p47).

Companies may also attempt to shape governmental policy making, leading to what is known as regulatory capture. Skjærseth and Skodvin argue that the extent to which this happens will depend on whether the relationship between the companies and governments is collaborative or conflict oriented (Skjærseth & Skodvin 2001 p48).

Frynas (2003) says that Shell traditionally has had "some very close relationships with governments. One of its strengths has been the ability to manage those relationships" (Frynas 2003 p280). He went on to say that the importance of these relationships has, in some areas, been surpassed by the growing influence of other parts of society (Frynas 2003 p280). It is in any case clear that all organisations have to operate within the legal and policy frameworks that are determined by governments.

"Large companies seem to be affected by the political realities of their home-country bases. Shell Europe mainly operates within the framework of European politics, while Shell Oil in Houston, Texas, is trapped between two different climate-policy situations. Europe, with the European Union in the lead, has had

the ambition to play a leadership role in international climate policy since the beginning of the" (Skodvin & Skjærseth 2001 p103), while the United States government has been much more reluctant to react.

In much of Europe there is more of a tendency than in the United States for companies to work with government bodies to determine environmental standards. "There is a greater tradition for evaluating environmental risk, often in close co-operation with the authorities. The companies participate to a greater degree in both the formulation and the implementation of standards. Lack of compliance often leads to negotiated solutions that aim at improvement in the next round. European companies are thus used to actively participating in the formulation of environmental policy" (Skodvin & Skjærseth 2001 p103).

It would therefore seem likely that an oil company that was based in Europe would be more likely to take a proactive approach in working with national governments and European institutions to shape climate change policies. Such companies would also be likely to take a more considered and cooperative position than in countries such as the United States where environmental policy making has a history of being more adversarial, where government tend to impose regulations which are then enforced in court if necessary.

In the run up to the Kyoto treaty the European Union was keen to be seen as a leader in climate change policy and increasing the use of renewable energy. The aim was to double "the use of solar and wind power to 12% of Europe's energy requirements by 2010". The announcement gave a clear signal to industry and complemented existing incentives to develop renewable energy in Germany, Denmark and Holland (Sissons 1997).

2.6.2 The Netherlands as a leader in climate change policy

European policies towards climate change have tended to be clear and prescriptive with targets for reductions in greenhouse gas emissions. The Dutch government in particular has set national targets and "is currently using all main categories of policy instruments in climate policy, including regulation, economic instruments and highly structured long term agreements. Fourteen industrial

sectors were selected as priority target groups involving some 12,000 companies responsible for over 90% of industrial pollution" (Skjærseth & Skodvin 2001 p57).

"Dutch authorities are thus sending a clear signal to the industry, creating firm expectations of future regulations, by stepping up climate policy over time. This also leads to less uncertainty with regard to future market opportunities related to renewable energy sources. These signals correspond well with, and are actually linked to Shell's anticipation of a future in which renewable energy sources will account for a significantly increased share of energy demand" (Skjærseth & Skodvin 2001 p57).

Boyle (1998) makes a similar point in his discussion of differing national responses to climate change. He says that the Netherlands was for many years a leader in taking positive action and that a large proportion of the nation's industry entered into voluntary agreements. The government introduced "green taxes which reward investment in renewable energy and energy efficiency" this put "Dutch industry well ahead of most other countries in preparing for change" (Boyle 1998 p4)

"The Netherlands has generally strong neo-corporatist qualities and relies on industry self-regulation within binding frameworks, makes virtually no use of the courts, emphasizes flexibility and focuses intensively on close cooperation between target groups and the authorities, and between different governmental departments and agencies aimed at consensus-building [...] Dutch companies are thus used to actively participating in the development and implementation of environmental policy. According to Shell Netherlands, the company has a very good relationship with Dutch authorities on environmental matters" (Skjærseth & Skodvin 2001 p48).

It is clear that Shell, with its Dutch roots and being one of the largest companies in the Netherlands, would have played a part in the formulation of Dutch policy and would have been significantly influenced by it. It is likely that this would have in turn shaped the organisation's global outlook. Shell is however a multinational organisation and therefore when deciding on a position on climate change it is

likely that senior management would have at least considered the implications for the organisation's global operations.

In 2000 Shell set up an internal greenhouse gas trading scheme. This had two purposes, first to help Shell to "meet their self imposed emissions targets" (Skjærseth & Skodvin 2001 p50), and secondly to help them gain experience in emissions trading schemes. This was because similar international schemes were being proposed to allow companies to trade carbon emissions as part of a move to reduce overall emissions. "It may be argued that Shell's approach to climate change may have much more significant long-term implications for its organizational structure and business orientation and reflects a higher level of commitment" (Skjærseth & Skodvin 2001 p50).

In comparison to the United States, the more environmentally proactive position of European oil companies has had an influence on other industry organisations in the energy sector. For example "the European Petroleum Industry Association (EUROPIA) has adopted a significantly more proactive position on climate change due to the change in climate strategies of both Shell and BP" (Skjærseth & Skodvin 2001 p57).

2.7 The Role of Key Individuals

2.7.1 Shaping individuals' decision making

Hambrick (1984) outlines the ways in which individuals' previous experiences shape their decision making processes in terms of their "knowledge or assumptions about future events, knowledge of alternative [courses of action] and knowledge of consequences attached to alternatives" (Hambrick 1984 p195). Demographic factors such as age, education and socioeconomic background, as well as experience in the industry and the organisation in question, may have an influence on an individual's perception of an issue and the merits of potential responses (Hambrick 1984 p196). Hambrick also suggests that combinations of individuals' characteristics and external environmental factors may lead to planning outcomes that may not have been predicted by knowing only one set of variables. It would however be very difficult to objectively gauge the influence of many of these variables.

Chattopadhyay et al. (1999), in contrast, suggest that the beliefs and hence decision making processes of senior managers are influenced more by the beliefs of others in the senior management team than by the previous positions they have held or experiences they have had. They suggest that individuals are more likely to be influenced by social interaction with colleagues to whom they relate more closely, by virtue of factors such as shared backgrounds, experiences and age.

It is clear however from both Chattopadhyay et al. (1999) and Hambrick (1984) that top management teams that have worked their way up through the organisation are likely to maintain the status quo, have narrower perspectives, and come up with less innovative solutions to unprecedented problems (Hambrick 1984 p200). This may be particularly important to some of the larger oil companies that have a policy of promoting managers from within the organisation.

Hambrick goes on to point out that senior managers are not chosen randomly from potential candidates "Executives often are chosen precisely because they have the 'right' background or temperament to carry out actions hoped for by the board of directors or other controlling parties" (Hambrick 1984 p197).

Chattopadhyay et al. (1999) also confirm that individuals with similar views to the existing management team may be more likely to be promoted than those with differing views (Chattopadhyay et al. 1999 p781). This would tend to suggest that the promotion of new executives was more likely to maintain the status quo, rather than bring about radical change, especially if they were internal promotions who already had a history of interactions with other senior managers and experience of the corporate culture.

It is likely that any changes in Shell's senior management team, for example the appointment of a new Chair of the board of Directors, would lead to the promotion of individuals who's views were broadly in line with the overall direction of the organisation at the time. As a result one would conclude that particularly if senior individuals weren't appointed from outside the organisation, any changes in the organisation's position are more like to be stimulated by a change in the external environment that forces a novel reaction from the existing management team.

2.7.2 Leadership

The fundamental difference between Exxon and BP (and Shell) is that Exxon argued that while there was still a degree of uncertainty over climate change it did not make sense to risk what they saw as the economic consequences of implementing the Kyoto protocol. BP and Shell, on the other hand, believed that the potential consequences of climate change were so serious that we should take precautionary action, even if there was still some uncertainty (Rowlands 2000 p343-4).

Rowlands (2000) discusses these apparent differences between Exxon's and BP's attitudes towards environmental issues, in particular carbon dioxide emissions. He concluded that the single most important difference between the two companies was that BP had a charismatic chief executive (Lord Browne), with some ideas that were quite radical for the industry. In comparison Exxon's chief executive (Lee Raymond) was more traditional and conservative (Rowlands 2000 p350). Rowlands goes on to argue that "not surprisingly, the broader BP organisation reflects its leader's ideas" (Rowlands 2000 p350). He however then qualifies this by saying that the organisation's "decentralisation led to differing

views on how best to do any particular task" (Rowlands 2000 p350). It is however reasonable to argue that the attitude of the chief executive has an influence on the corporate culture, and that an organisation with charismatic and outspoken members of senior management is more likely to have policies and practices that differ from the accepted norms for the industry.

BP publicised reductions in its carbon dioxide emissions, but it could be argued that this was as much the result of improved efficiency, and hence cost reductions, and the company is still committed to the production of oil and gas as its core business (Rowlands 2000 p345).

The article by Rowlands only considers two companies and there is little attempt to identify and test the mechanisms by which the proposed hypotheses may work. The author does however acknowledge some of its weaknesses, such as lack of understanding of the way in which different factors interact (Rowlands 2000 p352). He asks whether responses to threats may be to some extent determined by the corporate structures and "the way in which information flows to the top of the company (corporate understanding) and the way in which research is financed at the national level" (Rowlands 2000p352).

Prakash's (2000) study, discussed earlier, looks at the influence of multiple stakeholders on an organisation. It also 'unpacks' the firm, assessing internal processes instead of regarding it as a single entity. It emphasises the importance of leadership, as opposed to power. This involves policy entrepreneurs who believed in a policy, getting it into place by persuading other key individuals that it is the right thing to do, as opposed to using quantifiable cost benefit analysis to demonstrate objectively it was the best course of action.

Prakash emphasises the importance of leaders' power to convince sceptics in order to bring about a consensus decision. Often they focused on defending the company against a "hostile external environment" to make their case, the "policy supporters invoked the [threat] of the external factors to impact internal dynamics and usher in institutional change" (Prakash 2000 p67).

If a proposed policy change is likely to lead to significant organisational change it is likely that there will be winners and losers within the organisation. This is likely to lead to groups who will support and oppose the changes. If there is little organisational change proposed and therefore no real 'losers', it is likely that there would be few who would oppose the decisions (Prakash 2000 p67).

In the case of Shell's policy towards climate change, their initial proposal was to increase investment in renewable energy which would have created 'winners' without significantly affecting other parts of the business. The implication is that in the long term the significance of the fossil fuel part of the organisation will decline in importance. Shell management has however pointed out that oil will be a major part of their business for the foreseeable future, which would seem at odds with their statements on climate change, but would reassure those involved in these parts of the organisation.

2.8 Summary

It is obvious from the literature that Shell would have experienced a wide range of factors that could, to differing degrees, have influenced the position it took on climate change. It is also apparent that combinations of factors could interact in ways that would produce results that were more than simply a sum of the parts. Path dependency theory suggests that relatively small events early on in a historical sequence may set in place a course of action that then becomes increasingly difficult to deviate from. The order and timing of events therefore becomes important to understanding the eventual outcomes.

A number of potentially influential factors are suggested by the literature. It is clear that organisational structure and culture are inextricably linked, and that they have the potential to influence strategic planning outcomes. There is however no clear consensus on how the strength of such influences can be quantified on a practical basis. There is also a suggestion that there may be other factors that are considerably more significant in deciding eventual outcomes.

There are a range of theories in the literature that describe decision making processes within organisations. This thesis takes a broadly institutional approach. The main debate of interest is the degree to which strategic planning outcomes are the result of rational economic decision making, as opposed to institutional factors that are out of the actors' control, and possibly not even recognised by the actors.

Scenario planning is claimed to be a central part of Shell's strategic planning process, and some authors suggest that it plays an important part in the position the organisation takes on major issues such as climate change. There is debate in the literature over how realistic the scenarios are in practice, with authors arguing that they give the impression that Shell is very much a passive actor, reacting to events, rather than being actively involved in shaping them. There is also much discussion of the way the external environment is perceived by individuals within the organisation. The literature argues that actors generally see the external environment as something that is objective and independent, something that can be rationally analysed. Several authors however argue that

the external environment is actually socially constructed and dependent on the individual seeking to analyse it.

The literature discusses the relative importance of long and short term economic planning objectives, and the financial risks and benefits of being an early mover in a developing market. The conclusion was that the key factor for an organisation is judging when it is the right time for that particular company to move into the renewable energy market.

It is clear that Shell's early move into renewable energy was linked to, but not necessarily dependent on, its position on climate change. Different oil companies with different outlooks and planning time horizons make different judgements about when is the right time for them to move. An oil company is more likely to support calls for controls on greenhouse gas emissions if it is planning to diversify into renewable energy.

There have been suggestions in the literature that an energy company with a less carbon intensive product portfolio would be more likely to support calls for restrictions on greenhouse gas emissions. The evidence from studies has however failed to show any clear link between the two.

There has been much discussion of the way in which public discourse has influenced the position Shell took in relation to environmental sustainability and social responsibility issues in general. There is a general agreement among authors that organisations that operate within an environment where there is a strong public discourse on a relevant issue are likely to have their decision making influenced by that discourse. This is particularly likely to be the case if the organisation has received strong public scrutiny or criticism of its position. Shell experienced considerable negative publicity over the disposal of the Brent Spar and its involvement in Nigeria; this is likely to have influenced management thinking when they were considering what position to take in the run up to Kyoto.

The public in Europe, and the Netherlands in particular, accepted the seriousness of climate change much earlier and has been more supportive of action to combat it than in the United States. A company based in Europe is therefore more likely

to support an initiative such as the Kyoto protocol. This is evident in the difference in the position taken by Shell's subsidiary in the United States and Shell's headquarters in Europe.

An organisation that was openly refusing to support what the public in its home country saw as desirable is likely to have questions raised over its legitimacy. Once Shell's management realised that it could not defend itself against the criticism it experienced over Brent Spar and Nigeria, it decided that it needed to carry out a wider stakeholder analysis and reach out to its critics with bridging actions.

The literature suggests that, as with public discourse, governmental policies and national regulations also influence the position taken by organisations. Government policies towards climate change in Europe, and the Netherlands in particular, have been much more progressive than in the United States. The Dutch government has also traditionally worked closely with industry when planning and implementing policies, this is also likely to have had a significant influence on Shell, an organisation with a strong connection to the country.

Key individuals within an organisation have the capacity to play a significant part in determining the position the organisation takes on particular issues. Factors such as an individual's age, background, education and experiences will all influence their views on particular issues, but as the literature says this is very hard to quantify meaningfully. The literature also points out that individuals whose outlooks suit what is accepted as appropriate within the organisation at that time are more likely to be promoted to senior management.

There is some debate within the literature over the extent to which individuals can influence the position of an organisation. In an organisation with a powerful chief executive, that person's level of influence is likely to be higher than at Shell with its more consensual committee structure at board level.

This thesis investigates the contribution that each of these factors made towards determining the position Shell took on climate change, within an over all theory of path dependency.

Chapter 3

Methodology

This chapter is a detailed description of the methodology used to carry out the research.

It discusses what data was required to address the research question and then considers how the data was collected, looking for the best ways of gathering and interpreting it to give the types of results desired. It considers the issues of sampling, and the practicalities of gaining access for interviews with the individuals of interest, as well as accessing other potential sources of primary data. Matters such as reliability and validity are addressed as are ethical concerns.

3.1 Introduction

The research takes the form of a single case study as described by Yin (1994). Yin states that case studies are the preferred strategy when "a 'how' or 'why' question is being asked about a set of events over which the investigator has little or no control" (Yin 1994 p9). These conditions fit this thesis, as it is asking why Shell took the position it did, in being one of the first major oil companies to acknowledge climate change as a serious issue, and why it has been more proactive in addressing the issue than the industry norm. As well as this the researcher is unlikely to have any influence over company policy or practice over the period of the research.

The theoretical background to this thesis is more interpretative than positivistic. It takes the point of view that knowledge is contextual (Mason 2002 p62) and seeks to understand a "transient" or "emergent" reality (Chia 1995 p579) that is specific to the people, the organisation, and the context in which they work. This thesis leans towards a constructivist philosophy, with an understanding of individual perceptions being based on a subjective reality produced by those involved, based on cultural factors, relationships and contextual knowledge. For this reason it was felt that a research method based on qualitative data gathering would be best able to prove the desired in-depth insights into individuals' perceptions of events.

The primary source of data was semi structured interviews with key individuals linked to Shell; this was supplemented with documentary evidence where available. As Robson (2002) states, one of the "circumstances in which a qualitative research interview is most appropriate" is "where individual perceptions of processes within a social unit – such as a work group, department or whole organisation are to be studied" (Robson 2002 p271). This fits the aims of the research; i.e. of studying individual actors' views on why an organisation took the position it did with respect to an area of policy where there was uncertainty as to how best to act.

3.2 Deciding what data was required

3.2.1 Introduction to data gathering

"Research design is the logic that links the data to be collected (and the conclusions to be drawn) to the initial questions" (Yin 1994 p 18).

The aim of this research is to analyse the development of Shell's position on the issue of climate change. It is looking at the reasons why Shell's position diverged form the industry norms and what factors were influencing the organisation. The thesis is interested in historical events, going back to the late 1980s when climate change was starting to become the subject of wider public discussion, through to the end of the 1990s when the Kyoto treaty was signed. It also looks at more recent events that may help illuminate management and decision making processes at Shell.

The first step was therefore to gather information from documentary sources about precisely what Shell's policy is, and how it has changed. Following that, the task was to understand why the policy had developed in the ways that it had. To do this the researcher sought the views of individuals who have been involved in policy making, and those who have been close to them, and witnessed the process. This was done both by interviewing key individuals, current and previous employees of Shell, and also by analysing interviews, speeches and statements previously made by key individuals.

Of particular interest was gaining access to individuals who were senior Shell executives in the early to late 1990s, through the period when climate change was starting to become a topic of public debate, and the subsequent signing of the Kyoto treaty. It was also valuable to talk to current employees, some of whom have been working at Shell since the early 1990s. These individuals had therefore witnessed the development of the climate change debate, and Shell's response, in terms of internal discussions and also its policy response, from the earliest days.

The aim was therefore to talk to those individuals who were involved in, or who had access to, the decision making and policy setting process in Shell, i.e.

individuals who were as senior as possible. It was also of interest to talk to those who had witnessed or contributed to the decision making process, for example advisors and researchers working in Shell.

It was also felt desirable to interview people from outside the organisation who would have an interest or a particular perspective on the development of Shell's policies. This included for example, other researchers in the field, other people working in the energy industry and environmental organisations campaigning for a stronger response to climate change.

It was recognised that although interviews would be the main source of data, full use should be made of all other relevant sources. Shell has an on-line archive of speeches and presentations made by its senior executives going back to 1996. The organisation also has a similar archive of press releases. Several media sources, including the major newspapers, have good databases of articles and interviews about the development of knowledge on climate change, and the growing public debate about climate change. As well as this there is information available about industry responses, including interviews with senior energy industry executives. These were particularly useful for obtaining a historical perspective on Shell's position, and the wider topic of climate change. Throughout the research process an open mind was kept about the possibility of other useful documents becoming available.

The data gathering programme was designed to evolve, within the boundary of the research question, to include different people as individuals were interviewed and the work progressed. The aim was to explore the field, building up a picture of the topic as the research developed.

3.3 Planning the data gathering

3.3.1 Primary data gathering at Shell

Why was Shell chosen?

Shell was chosen because it is a case where one of the largest companies in the fossil fuel industry diverged from the norms of that industry. It was among the first, and most prominent company to speak openly about the threat of climate change and the need for industry to react, and has since taken the most considered and consistent path.

This research seeks to understand why this organisation stands out so prominently in contrast to the industry norms. It is being studied because it is an extreme case (Maylor & Blackmon 2005 p249), or as Feagin, Orum and Sjoberg (1991) put it a "deviant" from the norm (Feagin et al. 1991 p61&2).

The study of a deviant case can lead to a better understanding of a wider population (Feagin et al. 1991 p16). The in-depth study of why Shell was among the first to acknowledge climate change, and has been among the most consistent in addressing the issue, will not only provide an understanding of the path taken by the organisation, but should also help to produce an understanding of why the rest of the industry has taken a different course, and has been much slower in addressing the issue. The sample here is purposive; a particular case was selected because it offered a particular insight into the research topic.

It was decided to concentrate on one company in order to allow for a greater depth of study, rather than to carry out a comparative study of a number of organisations. It is accepted that the greater depth of understanding of the processes involved with the single organisation is at the expense of the field level understanding that could have been gained from a comparative case study design.

Choosing the individuals within Shell

As this is an in-depth study of a particular case, a sampling methodology that would allow the selection of particularly interesting subjects for data gathering was chosen. It was felt that methodologies designed to produce randomised sampling

to get a representative sample of a population would not have been appropriate in this case. The sampling strategy was therefore very much purposive. The plan was to talk to people and search for information which would be particularly effective at illuminating the research question. The aim was therefore to go directly to specific people, rather than take a sample of the company as a whole.

The aim was to gather data from the key decision makers within the company. The top person in the organisation is the Chair of the Committee of Directors; key individuals to interview would therefore be the Chairs going back to the early 1990s. The names of these people are freely available, but they are also still prominent people in the business world, and access proved a particular problem. There was also a former senior executive in Shell UK who had been particularly vocal about climate change, who provided a useful insight into Shell's operation.

Initial research was done into the organisational structure of Shell to obtain a clear idea of where individuals fit into the organisation. However it is recognised that the formal structure of an organisation may not necessarily be representative of the reality of practical working roles and relationships of the individuals within it.

Shell provides a significant archive of reports and speeches on its website. From these documents it can be seen which individuals have been making particularly significant comments about Shell's response to climate change, these people could then be approached. Similarly, media articles often mention names of key people involved in particular aspects of policy making. The final method of selecting individuals to approach was by using personal contacts in Shell known to colleagues at the institution where the researcher was based. This proved to be a valuable point of entry into the organisation.

Once initial contacts were made with individuals, and interviews carried out, they were then asked if they would like to suggest any other individuals who were key players, who would be useful to talk to about this subject. Most of the interviewees, both current and former employees, were happy to suggest one or two other names. After a while the same set of names started recurring, suggesting that a reliable sample had been achieved. This is discussed in more

detail in chapter 5. This strategy of 'snowballing' provided a network, of key players.

A negative aspect of this strategy is that the people who agree to be interviewed may be, to some extent, be the ones who feel they have something to say. A researcher can't force individuals to talk; they are therefore, to some extent, a self selecting sample. During the course of this research, the majority of individuals approached did agree either to be interviewed or to answer questions in writing.

When using this strategy there is also the possibility that the sample is a closed circle of individuals within the organisation, and that there may be other circles of individuals, which remains invisible to the researcher, but are equally influential in the organisation. It must be said however, that most people contacted agreed to be interviewed, and that the group included some of the most senior executives in the company so that it is less likely that there were circles of influential people who were missed.

The number of individuals in a sample of this kind is likely to be relatively small for the following reasons:

- The historical aspect of the research makes it harder to track down key people who have since left the organisation.
- The international nature of the organisation makes it harder to access individuals who may be living and working abroad. Shell's headquarters are now in Holland, although it has major offices in London.
- Senior individuals have a lot of pressure on their time and may therefore be less likely to be willing to give time to academic research.
- By definition there are only a few senior individuals in an organisation.
- The potentially sensitive nature of the topic may make people less willing to talk. This doesn't however seem to have been a serious issue; individuals within Shell have been reasonably open and willing to talk.
- As climate change becomes bigger news, there is more interest from the media and other writers and researchers. There is therefore more pressure on peoples' time to make public responses to the issue.

Although the sample may be relatively small compared to the total size of the organisation, the key was to have a set of individuals whose views and opinions can illuminate the research question in the desired way. By obtaining a select group of Shell's most senior management, who were involved in the decision

making process over the time of interest, a valid insight into the formation of Shell's policy can be obtained.

Practicalities of gaining access to Shell
Gaining the initial access to individuals of interest was perhaps one of the hardest aspects of research. Initial enquiries to Shell requesting help to carry out the research did not bring positive responses.

It was therefore decided to simply approach people on an individual basis, and asked if they were willing to be interviewed. The result of this was that there wasn't anyone in Shell with any overall control over the way in which the research has progressed. The advantage of this was that the researcher was free of any influence from Shell management; the possible disadvantage was that having official backing may have brought more opportunities for accessing individuals and documentary evidence.

Flick (2002) discusses the effect that having official backing may have on the attitude of interviewees. "Support for [the research] by a higher authority in the first instance may produce distrust in the people to be interviewed. On the other hand, being endorsed by other people (e.g. colleagues from another institution) facilitates access" (Flick 2002 p55).

During this research there was always the question of whether individuals would agree, or have the time to participate in the research. As Flick puts it in essence "research is an intrusion into the life of the institution [...] is a disturbance, and it disrupts routines with no perceptible immediate or long term pay off for the institution" (Flick 2002 p56). While at times this may be true, an organisation, or individuals within it, may feel that they have a message to communicate, and would welcome an opportunity to discuss their views. Virtually all the contacts, both current and past employees of Shell, seemed happy to be interviewed, and were willing to give their opinions freely.

3.3.2 Other Organisations

Most organisations in the energy industry are members of 'Business Councils' or 'Industry Associations'. In the initial exploratory stages of the research interviews were carried out with individuals from a number of such bodies including the UK Petroleum Industry Association and the British Wind Energy Association. This proved to be a good way of getting a background picture; the intention was also that the industry associations could provide a point of entry into companies who were their members. In reality this proved to be untrue, as although the industry association were easy to access and willing to talk, they were unwilling to give out contact details of individuals in their member companies. The most they would do is to offer to pass on the researcher's details, but this never resulted in anyone from the member companies responding to the request for a meeting.

It would have been interesting to have been able to interview individuals from an organisation such as Greenpeace, or Friends of the Earth, to get an outside perspective from someone in an organisation which has typically been critical of the fossil fuel industry. Initial contacts failed to produce any results, and even after some discussion no-one from their climate change teams would agree to be interviewed because they lacked the time.

A member of a small environmental organisation called Platform - London which has done extensive research into the oil industry agreed to answer some questions via email which provided a useful perspective from outside the industry.

3.3.3 Secondary data

Secondary data was sought from a number of sources. Searches of national newspapers were carried out using the online Nexis archive. This was particularly useful for finding when Shell made statements about environmental issues, reacted to events or was being criticised or put under pressure from other organisations. The ability to count the number of articles on a given subject over set periods was a useful indicator of the level of public discourse at various points in time. Reading a selection of these articles allowed the researcher to gain an insight into the content of this discourse.

Newspaper articles also allowed the researcher to compile historic details of key events relating to Shell over the period of interest. The changing content of public discourse and statements made by Shell could then be related to these key events.

The Intergovernmental Panel on Climate Change (IPCC) reports were an invaluable source of information and background material on changing scientific opinions on the significance of climate change. This gave the researcher an idea of what the scientific consensus on climate change was, information which could be linked to media coverage at various points to give a further indication of the development of the public discourse.

Shell's archive of press releases and public presentations and speeches allowed the researcher to gauge the way in which Shell wanted its position on climate change to be presented to the public. Shell also released regular annual reports and a number of specific reports relating to sustainability, social responsibility and environmental issues that provided useful secondary data. It is of course recognised that public statements and press releases are very much an indication of what the organisation wants the outside world to hear, and are not necessarily a reliable gauge of what the organisation is actually doing. As mentioned previously these Shell sources also gave a good indication of whom some of the key figures were at given points in time.

A final source of data, and background information, was government and regulatory bodies such as European Union agencies. These provided information on policies on environmental issues, and specifically climate change, to which organisations such as Shell would have to react.

Some of the secondary data was used to set the context for the research, and some was used in the final data analysis. This data, along with the existing empirical literature on Shell, was also essential for guiding the interviews, where the primary data was gathered.

3.4 Data gathering

3.4.1 Background

It was felt from the earliest stages that a qualitative case study type methodology would offer the best way of obtaining the kind of insights that the research question was designed to find.

This type of research allows an in depth study of individuals personal views and perceptions of how Shell had chosen to position itself in the changing institutional environment that has developed as a result of the debate over climate change. It allows the researcher to study their perceptions of key events and how actions have been rationalised. A case study methodology is the best way to allow a range of data to be collected, and used to address the research question.

3.4.2 The use of a case study methodology

A case study can be defined as "an in-depth, multifaceted investigation using qualitative research methods, of a single social phenomenon" (Feagin et al. 1991 p2). Faegin et al. argue that "a principle argument for case study research is that it provides a way of studying human events and actions in their natural surroundings [...] the case study enables an observer to record people engaged in real-life activities, the [scientific] experiment is an artificial construction of life" (Feagin et al. 1991 p7). The type of research carried out in a case study is grounded firmly in the social situation in which the phenomena being studied occur, it is not an abstraction, generalised to remove its context. This means that the insights gained are deeper and richer than would be possible with a more experimental, or quantitative, research methodology. The compromise is however a loss of generalisability. It was important to be able to bring the historical context of the organisation into the research as it was felt that this would make a significant contribution to an explanation of why the organisation acted the way it did.

Qualitative, case study, methodologies are particularly good at producing holistic studies of social interactions. "Studies of the occupants of individual roles enable the investigator to discover how the definition of a role emerges out of interactions

between role-occupants and others; and studies of organisations permit the researcher to discover social interaction patterns that occur among employees" (Feagin et al. 1991 p8). This in-depth study of individuals within Shell will allow their individual roles and perceptions to be analysed. It will allow an understanding to be developed of which individuals and events were particularly important in the development of a particular aspect of a company policy.

Research quality

An important part of the research design is maintaining the quality of the research and being able to demonstrate this quality. This is something that Yin (2003) discusses at length. The issue of quality is broken down into the following four areas.

- Construct validity

This refers to the level of confidence that suitable measures are chosen as indicators of the types of phenomenon being studied (Yin 2003 p35). This research is studying why Shell was one of the first organisations in the industry to take a positive position on to climate change.

Shell's position can be gauged by two factors. First by their public statements, in the form of speeches by key individuals, reports published and other publicity material, and second by efforts made by the organisation to combat climate change, for example by improving efficiency or by investment in renewable energy.

According to Yin, strategies for ensuring construct validity include, "using multiple sources of evidence, establishing a chain of evidence" (Yin 2003 p 34). This research studies the views of key individuals from within Shell, and triangulates it with other research, individuals external to Shell, and secondary data sources such as Shell publications and media articles. From these sources it aims to build up a coherent picture of the reasons why Shell took the position it did.

- Internal validity

This refers to links between cause and effect, i.e. if one company has, for example, a higher level of knowledge on climate change, how can the researcher be sure that this is a factor contributing to a more proactive policy response. Obviously if there is little difference in levels of knowledge between different companies, one can be pretty sure that level of knowledge is not a contributing factor.

There is a need to link the phenomenon being studied to the potential contributing factors via a plausible chain of cause and effect. There may be situations where one can see a likely cause and effect, a plausible link, but be unable to prove it conclusively. Yin suggests that a way of addressing this problem is by building consistent explanations, and by addressing alternative explanations and demonstrating why they are not plausible in this situation (Yin 2003 p36).

- External validity

This is concerned with the issue of generalisability, i.e. are the findings from this research relevant to examples "beyond the immediate case study"? (Yin 1994 p35). The key here is that the research is not intended to "rely on statistical generalisation [to a wider population] but on analytical generalisation" (Yin 1994 p36). This means that the researcher is attempting to generalise their findings to theory rather than other individual cases. This research is related to strategy and institutional change, and applies it to a particular organisation of interest. As Yin suggests the results of this study may therefore be applicable to other organisations which are making strategic decisions as a reaction to institutional changes (Yin 2003 p37).

- Reliability

In a qualitative case study methodology the test of reliability is "if a later investigator followed the same procedures as described by an earlier investigator and conducted the same case study [they] should arrive at the same findings and conclusions" (Yin 1994 p36). The key here is the careful documentation of the research procedures carried out. Details of how the research was carried out are

described, in this chapter, in such a way that would allow a later investigator to analyse and repeat the methodology used. This is described by Yin as the case study protocol (Yin 2003 p38).

The reality of a case study is however that it is carried out at a particular point in time, even if a later researcher returns to exactly the same point events will have moved on. This should not however be a serious problem with this study as it is concerned primarily with historical events; a study of the same period of time should therefore produce similar conclusions.

Case study protocol

The case study protocol is seen by Yin as an important way of "increasing the reliability of case study research" (Yin 1994 p 63). The purpose of the protocol is to clearly set out how the research is being carried out. This allows an outsider to follow exactly the research methodology, to assess its quality, and if desired to replicate the research.

Yin suggests that the protocol should have four components (Yin 1994 p 64&5):

- An overview of the case study, including objectives, any particular issues likely to arise, and relevant readings.
- Field procedures, i.e. the way the data is being collected, and from which sources.
- The precise questions the case study is asking.
- A guide for reporting the study, i.e. how results will be analysed and presented.

Although this thesis does not contain a case study protocol as a single item, it does contain all of these items. The introduction in Chapter 1 includes an overview of the research. It describes the context in which the research is set, the purpose of the research, as well as the precise question the study is addressing (Yin 1994 p66). The literature review covers relevant background reading.

The field procedures, i.e. the ways in which data was gathered are covered in this chapter on methodology. This includes information on who was targeted and how access was gained, how the interviews were carried out and how documents were

obtained. The data analysis methods and the way in which the data will be presented are also discussed in this chapter.

Multiple data sources

One of the main qualities of a case study is that it involves "multiple sources of evidence, with data needing to converge in a triangulating fashion" (Yin 1994 p13). Yin then goes on to discuss six principle sources of data, documents, both contemporary and archival, interviews, direct observation, participant observation, and physical artefacts (Yin 1994 p79&80).

This research uses interviews with key members of Shell's staff as its primary source of data, but then backs that up with secondary sources, in the form of documentary evidence. As discussed previously, this includes interviews available in Shell's archives, and also in the wider media. Also considered are a number of Shell's documents, such as company reports and environmental and ethical guidelines.

Direct observation, and participant observation was not felt to be practical because it was not possible to get the level of cooperation necessary from the organisation. It proved not to be practically possible to get the appropriate permission to allow the researcher to observe, first hand, senior management meetings where company strategy was being discussed. Physical artefacts were also not thought to be particularly relevant as data sources for this research question.

3.4.3 The use of primary interviews

Interviews with key individuals were used as the principal source of primary data. This was because it was felt important to talk to the individuals who were involved in formulating Shell's policy response to climate change to gain an understanding of their perspectives on the events in question.

The interviews were semi structured because of the desire to get an in-depth understanding of the interviewees' points of view on the topic of research. The research is seeking to understand the reasons why Shell has been more open and

more proactive over the threat of climate change. It was felt important to allow individuals to talk freely about the issues they perceived to be most important, rather than risk the interview being constrained by the preconceptions of the researcher. There was a loose structure to the interview in that the researcher explained the research topic at the beginning, and used an interview guide, to prompt the interviewee when necessary, and to ensure that a number of potentially interesting areas were not overlooked.

The implication of having a less structured data collection methodology is that it doesn't generate standardised sets of data that can be compared in the way that questionnaires, for example, could do. The benefit is that a depth of understanding, of individuals' perception, can be reached that would not be possible with a more standardised methodology.

Some of the interviews carried out were conducted face to face, the others were done over the phone. This was largely a matter of practicality, and largely dictated by the interviewees, rather than the researcher. Interviewees who were particularly busy found it easier to find time to talk on the phone. All of the face to face interviews were carried out in Shell's offices in London, so physical access was not a problem.

Preparation

Where possible background research was carried out on the interviewee, before each interview, in order to find out a little about their professional background, their work experiences and personal interests, and when appropriate, how long they had been working in Shell and in what positions. This allowed each interview to be personalised, and fine tuned, to allow the maximum amount of useful information to be gained, and to make the most of each individual's personal experiences. Knowing each individual's professional background also helps in the understanding of their perceptions of the research topic.

For each interviewee an interview guide was prepared, space was left to write notes, to record any personal thoughts during the interview, and to give some space to write more detailed notes if the interviewee was in any way unhappy about being recorded. The guide contained a list of the key "topics and their

sequence in the interview" (Kvale 1996 p129). As the interviews were semi structured, the guides were fairly loose lists of topics of interest, with some outline questions to guide the interview.

During the interview

At the start of the interview a brief introduction to the research was given, to explain exactly what the purpose of the research was, and what the researcher hoped to get from interviewing the particular individual (Kvale 1996 p128).

Permission was then asked to record the interview, so that the researcher could remember what was said more accurately. It was felt that explaining that the aim was to ensure accuracy would be seen as a positive and non-threatening reason for recording an interview. At no time were any problems experienced, no one seemed uncomfortable about being recorded, even those interviewed on the phone.   All the interviewees were professional individuals, most of whom had experience of speaking on the record about Shell.   This of course has methodological implications in terms of validity, in that the individuals may also be experienced in repeating a standard company line on a particular issue, but it also means that there were unlikely to be any particular ethical issues in terms of protecting vulnerable individuals.

It was felt that it was important that interviews should be recorded wherever possible as it allows more information to be gathered than could be done simply by making notes during the interview. It also means that the interview is not interrupted by the need to take notes, and that the original interview can be 'revisited' at a later date. The interviews were recorded on a portable MP3 player, and then downloaded onto a PC for transcription, and of course backed up. The use of the MP3 player meant that the recorder was smaller and less obtrusive than a traditional tape recorder and longer interviews were not interrupted by the need to turn tapes over.

If no background information about an interviewee was known, they were first asked to say briefly what their professional experience was, how long they had been working in Shell, and in what positions. It was particularly interesting to see the degree of technical experience there is among the senior management, as this

is likely to have an impact on the understanding, and reaction to, a scientific issue such as climate change. It was also desirable to know how long the individuals had worked for Shell to get some idea of what changes they were likely to have seen, and how much exposure they had had to Shell's ways of thinking and working.

"In order to understand and analyse statements it is necessary to take into account the context in which they occur" (Flick 2002 p196). It is important for qualitative interviewers to encourage the interviewee to "produce enough material for the researcher to analyse in terms of contextual considerations" (Flick 2002 p196).

All the questions asked during the interview related to the individual's time with, or experiences of, Shell. The language was kept as straightforward as possible at all times, and the use of academic or theoretical terminology was avoided (Kvale 1996 p130). It was recognised that it was important that the interviewees felt free to say what they wanted and were not unduly influenced by the researcher's preconceptions, or were trying to say what they thought the researcher wanted to hear.

Immediately after the end of the interview the interviewer wrote up a few thoughts and reflections, these were helpful during the transcription and data analysis.

Transcription

The interviews were all carried out and transcribed by the researcher. Initial transcription was as close to verbatim as possible, including all the 'ers' and 'umms', and other verbal utterances as well as pauses, and laughs, where they occurred. The transcription was left as close to the original speech as possible to preserve a good sense of the character of the original conversation.

The initial transcription was usually done within a day; all were done within a week. This meant that the memory of the interview was still fresh in the researcher's mind during transcription. On the few occasions where a part of an interview was not completely audible, it was usually possible to remember the sense of that part of the conversation, if not the actual words used.

Each transcript was then rechecked two to three weeks later, by this time the immediate memory of the interview had passed, and it allowed the recording to be heard with 'fresh ears'. Any necessary corrections were then made to the transcription. A few minor errors were occasionally picked up although this was never more than an occasional word or phrase. On no occasion were mistakes identified that significantly changed the meaning of the interview. Ideally it would have been desirable to have had a second person checking the transcripts, but due to the lack of time and resources this was not possible.

The transcription protocol is provided in Appendix II

3.5 Sources of data collected

Below is a list of the key sources of data collected for this thesis. Full details of the key interviews carried out can be found in Appendix I

Primary research interviews
- Rob Hastings (Vice President Shell Renewables)
- Sir Mark Moody Stewart (Former Chair of Shell's Committee of Directors – at time of Kyoto)
- Lord Oxburgh (Former Chairman Shell UK)
- Roger Booth (Former Shell – First head of Shell Renewables)
- David Hone (Chief Climate Change advisor to Shell)
- Benjamin Diss (Platform London – environmental campaigning organisation)
- Jim Meyer (Oil Depletion Analysis Centre)
- James Lovelock (Independent researcher and former consultant to Shell)
- Nathan Bishop (Spokesman for UK Petroleum Industry Association)
- Alison Hill (Spokeswoman for British Wind Energy Association)
- Gaynor Hartnell (Spokeswoman for Renewable Power Association)

Shell speeches archive (about 20 relevant – 1996 to current)
- Jeroen van der Veer (Current Chair of Committee of Directors)
- Philip Watts (Former Chair of Committee of Directors)
- Mark Moody Stewart (Former Chair of Committee of Directors)
- Cor Herkstroter (Former Chair of Committee of Directors)

Shell documents
- Annual reports
- Energy scenarios
- Shell guide to business principles

Other Media sources
- Interviews with
  o Jeroen van der Veer (Current Chair of Committee of Directors)
  o Philip Watts (Former Chair of Committee of Directors)
  o Mark Moody Stewart (Former Chair of Committee of Directors)
  o Lord Oxburgh (Former Chairman Shell UK)
- Radio programme on Business responses to Climate Change

Other documents
- Greenpeace report – "Oil industry & climate change"
- Corporate watch report – "Shell's games at the Earth Summit"
- Friends of the Earth report – "Shell profits from Climate Change"

3.6 Data analysis

3.6.1 Introduction

Following each interview the researcher had a transcript ready for analysis. It is recognised that some information such as verbal utterances, tone of voice, gestures and body language of the interviewee is inevitably lost in the process of taping and transcribing a conversation. However the notes taken during and immediately after the interview helped to recapture some of this information. They helped illuminate why certain things were said and the ways in which they were said. Any particularly strong feelings experienced by the interviewer, about interviewees or their attitudes towards the subject, were also taken into account. This allowed as balanced as possible an account of the interviewees' views.

It is also recognised that differences between spoken and written language mean that decisions have to be made during transcriptions. The transcriptions aimed to record what was said verbatim, as accurately as possible, however when they were quoted in the thesis most of the "ums" and "errs" and other verbal utterances were taken out to remove unnecessary detail and make it easier to read fluently. As Kvale (1996) noted, the "publication of incoherent and repetitive verbatim interview transcripts may involve an unethical stigmatisation" of the group of people involved (Kvale 1996 p172).

The aim of the data analysis in this research was to evaluate the individuals' views on Shell's position on climate change. For this reason it was felt that discourse analysis was the most suitable approach to take. Content or conversation analysis that focuses in depth on the process and structure of the language used would not have produced the types of insights required in this analysis (Bryman 2001 p355).

The data analysis used discourse analysis that involves repeated reading of the interviews, an immersion in the data in order to draw out key themes. Bryman refers to this as adopting "an analytic mentality" or a "posture of sceptical reading[...] searching for a purpose behind the ways that something is said or presented" (Bryman 2001 p360-1). An added advantage is that discourse analysis can be used in a similar manner for a wide range of documents including interview transcripts, speeches, letters and company publications (Bryman 2001

p365). This research seeks to ask 'why' questions and look for underlying meaning; these types of questions are more amenable to unstructured techniques such as discourse analysis (Maylor & Blackmon 2005 p353).

3.6.2 Coding

Although coding is often rejected by discourse analysts as being reductionist (Miles & Huberman 1994 p8), it was felt that some very simple coding would be useful to gain an initial overview of the main areas of interest that were present in the data.

Coding helps assign meaning to pieces of text and is useful for "retrieving and organising" such information (Miles & Huberman 1994 p56/7). It is useful because it allows a broad assessment of themes and structures which run through the data; it is a tool for reducing large quantities of text into a more concentrated form "by paraphrasing, summarising or categorizing" (Flick 2002 p176).

The data analysis in this research did not however involve in depth coding as it was felt that this would reduce rich qualitative data into less revealing data of a more quantitative nature.

The codes used were initially based on the current literature on Shell's approach to sustainability issues, and climate change in particular, but also with an open mind to codes appearing "in vivo" (Bryman 2001p396) as the analysis progresses. They were based on a set of potential reasons why Shell had acted in the way that it had.

3.6.3 Analysis

Once the initial coding had been carried out, the interview transcripts and other documents were then thoroughly analysed for comments by the interviewees that relate to these concepts.

To obtain a deep understanding of the data a methodology was used that involved "continued readings of the source material and vigilance over one's

presuppositions [which permits] capturing the essence of the account [...]. This approach does not lead to covering laws, but rather to a practical understanding of meaning and action" (Miles & Huberman 1994 p8).

A list of prompts provided by Flick (2002) was used as a guide during the data analysis, and an emphasis was put on understanding the actors' perceptions and interpretations of events and actions.

The list includes questions to ask of the data such as: what phenomena are being addressed; who are the key individuals "which roles do they play and how do they interact"; "which aspects [of the topic] are mentioned (or not mentioned)"; when and where did key events occur, what reasons "are given, or can be reconstructed" and "with what intention [or] to which purpose are they made; and finally what "means, tactics and strategies [are used] for reaching the goals" (Flick 2002 p176).

3.6.4 Writing up

The purpose of the write up "is to develop a coherent narrative that tells the story of the case study". This was done by writing a broadly chronological narrative around key themes based on the initial coding used in the data analysis. (Maylor & Blackmon 2005 p252).

Much of the final write up is in the form of vignettes, using the actor's own words, to explain or illuminate areas relating to the research topic. Vignettes are defined as short narratives involving limited numbers of actors in a particular situation. They are described as an effective way to extract key "pockets" of information and "are helpful in formulating core issues in a case, [the researcher's] theory of what is happening" (Miles & Huberman 1994 p81). The research aims to allow the actors to tell their stories with their own words.

A more literary style of writing up the data analysis may be criticised as being incompatible with rigorous academic investigations. This is refuted by Feagin (1991) "the literary - narrative approach can be as precise and disciplined - and at

the same time a graphic, readable, and imaginative [...] description and is no less scientific because it is descriptive" (Feagin et al. 1991 p20).

3.7 Discussion of methodology

3.7.1 Research design and the case study methodology

When the research was initially planned there was a clear idea of the type of insights that the researcher wished to gain. The aim was to investigate the views of key individuals in order to analyse the reasons why an organisation had acted in the way that it had. A number of possible research methods were considered. The method used was chosen in order to provide the quality of data needed to provide the desired in-depth insights.

It would of course have been possible to use a much more positivistic, quantitative type methodology, for example by using questionnaires or focus groups involving a larger numbers of individuals within the organisation. The advantage of this would have been a much larger sample that would have given statistically significant data for a wider 'population'. It would have allowed the analysis of the views of a more significant proportion of the company. The key disadvantage is that it would not have allowed any of the in depth questioning of individuals that is possible with a one to one interview. This means it would not have been possible to analyse the background to their views and sources of influence in such depth. A quantitative research method would not have allowed the researcher to understand the ways in which individuals rationalised and justified their view. It would also have made it harder to draw in a wider range of varied documentary evidence that a qualitative case study can accommodate.

A secondary concern was that a quantitative study would have required the support of senior management within the organisation, which may have proved difficult to obtain. This would have been required to allow the approval and distribution of a questionnaire, or the formation of focus groups. It would also have required the co-operation of a larger number of individuals, but in a less personal way, which may also have proved harder to obtain.

A criticism of much research into strategy is that it is "often static, cross-sectional, and seldom involves any significant evolutionary perspective". "Case studies are typically wrapped around an explicit or implicit acceptance of a normative, rational model of organisational decision making" (Smircich & Stubbart 1985 p734). This

thesis aims to break out of that mould and therefore considers that an exploration of the organisational context and historical perspective is essential to understanding the current situation.

3.7.2 Use of interviews

Semi structured interviews were the chosen method of gathering primary data because it was felt that they were the best way of gaining the in depth understanding desired.

Interviewing is time consuming; it is therefore only possible to survey a relatively small number of individuals, producing a relatively small sample. (Robson 2002 p273). This is particularly true for a single researcher with relatively limited time and resources. This can lead to questions over the generalisability of the research findings. This shortcoming cannot be avoided; the great strength of in-depth qualitative research is the level of understanding of a particular situation that can be gained, rather than the breadth of the overall picture. The downside is a loss of generalisability to a wider field.

Carrying out interviews with subjects allows the building of a relationship with the respondent that would not be possible with less personal methods such as questionnaires. This should mean an increased level of trust and a willingness to discuss more sensitive issues (Dunne 1995 p7). The interviewer is also able to personally explain the purpose of the research and reassure the interviewee about any concerns they may have. This may be important when discussing the pressures and demands imposed by their jobs and other individuals within the organisation, particularly if the interview is being recorded.

The opposing argument is that a questionnaire can be completed in private. It can therefore give a greater sense of anonymity and is therefore better for dealing with sensitive issues (Robson 2002 p237). The respondent may not however be inclined to carry out such deep 'soul searching' when confronted with a questionnaire than they might in a face to face interview. There is also a tendency for respondents to both questionnaires and interviews to give responses that show

them in a positive light, even if their anonymity is guaranteed. This tendency can be addressed more directly by the researcher in a face to face encounter.

The negative side to building a relationship with the subject is that the nature of the relationship may affect the way the responses are given. Even if the researcher approaches each subject in the same way the relationship will be subtly different in each case. For this reason each interview will always be an individual experience and can never be a controlled, repeatable 'experiment' in the positivist sense. There is no way of avoiding this, and the researcher must be aware of the ways in which they may be influencing the individual subjects and guard against them. It was felt that the benefits of the richness of data gathered during an interview outweigh the potential difficulties of the influence of the interviewer (Frey & Oishi 1995 p27).

Semi structured interviews were used as the best compromise between a totally unstructured meeting and a fully scripted interview, which is effectively a face to face questionnaire. A pre planned list of topics to cover means particular topics of interest will not be missed, without tying the interviewee to the researcher's preconceived ideas (Bryman 2001 p323).

A major advantage of the chosen method is that it allows the research to develop and be shaped, as it progresses, within the boundaries of the research question. One of the main factors for consideration is: "who are the main decision makers that I should be talking to?" At the start the researcher inevitably has some preconceived ideas of who the main players were likely to be, but after talking at more length to people within the organisation it may turn out that other people are having a significant influence. A more fixed, pre planned, positivistic methodology would not have allowed the research to be shaped to take account of this. A questionnaire type method carried out on a preconceived list of players may not even have revealed other previously unknown sources of influence.

In conclusion, different methodologies have their own positive and negative qualities. No one is better or worse than any other; they simply provide a different type of insight into the question being asked. A widely distributed questionnaire will give a good indication of the overall situation and will appeal to a more

positivistic way of thinking. A smaller number of semi structured interviews will give an in depth insight into the thoughts and actions of a number of individuals within the organisation.

3.7.3 Validity & Reliability

Another point to be addressed is that of reliability and validity. If the researcher takes a constructivist point of view then the concepts of validity and reliability don't have quite the same meaning as they would to a strict positivist. As Mason (2002) puts it, it becomes important that you show "your data generation and analysis have not only been appropriate to the research questions, but also thorough, careful, honest and accurate (as distinct from true or correct – terms which many qualitative researchers would of course wish to reject)" (Mason 2002 p188). In terms of validity this means being able to demonstrate how you came to your conclusions "through a careful retracing and reconstruction of the route by which you think you reached them" and by being "explicit in the reasoning" (Mason 2002 p194&191). This research aimed to do so. The words of Yin (1994) further reinforce this: it should be possible for an independent critic to follow and evaluate the procedures followed. The procedures used in this research are completely and clearly documented so, as Yin put it, an "auditor could repeat the procedures" and verify the results (Yin 1994 p37).

It may also be argued that a quantitative, positivistic methodology such as a questionnaire is more robust because all the respondents are presented with exactly the same situation and it is repeatable. To an extent this is true in that it will give good reliability, but it does not necessarily lead to validity. The validity of the results from any methodology is still however reliant on the researcher's skills in devising effective questions to obtain the information successfully. This is equally true in conducting a face to face interview as it is when producing a questionnaire.

3.8 Ethical issues

Ethical issues are an important concern for any research directly involving individual people. As Kvale (1996) puts it "the personal interaction in the interview affects the interviewee, and the knowledge produced by the interview affects our understanding of the human situation" (Kvale 1996 p109). The ethical issues likely to be involved in this project are summarised and discussed in the following sections.

3.8.1 Research procedures

At all times the researcher aimed to be open and honest about the nature of the research. Although it is recognised that it is, "rarely feasible to provide participants with a totally complete account of what your research is about" (Bryman 2001 p484) as full an explanation as possible was provided. No deliberate deception was used to gather information that may otherwise have been unobtainable.

When potential interviewees were contacted the nature of the research was outlined. At the start of the interview permission was asked to record it, if the interviewee was happy this was taken as informed consent that they were willing to participate in the research. It was anticipated that all the potential interviewees would be mature individuals working in a professional environment, it was not anticipated that any of them would be especially vulnerable. If however, at any point an interviewee had appeared uncomfortable or unsure about participating, the interview would not have been pursued.

The interviewees were not offered anonymity as the nature of the research question would have made it difficult to disguise key individuals' identities. Occasionally interviewees asked that particular opinions were kept 'off the record' or not quoted verbatim. This was always respected.

3.8.2 Positive benefits of the research

The first, and possibly the most important concern is to address the potential consequences of the research. Kvale (1996) quotes the American Psychological Association in saying that research should have a beneficial impact on the "human

condition" (Kvale 1996 p109). It was felt important that the knowledge gained from this research project should be able to make a positive contribution towards efforts to improve the environmental policies of corporations in the fossil fuel industry.

It was felt that an understanding of the reasons why some companies were doing more than others maybe useful for those wishing to help encourage the less proactive ones to see the benefits of improving their performance. At the end of the project a summary of the findings was sent to all the people involved. Many of these people are key actors within Shell and other companies, with the potential to contribute towards decision making about future policies.

The research findings may also be of help to the individuals involved, in their jobs, and it is not anticipated that the research will have any significant negative impacts on the individuals.

This thesis will make a positive contribution towards the academic community seeking to understand the phenomena being studied. It will also lead to an improved level of knowledge and understanding for the researcher, which will help improve performance in future work.

3.8.3 Reducing the negative environmental impacts of the research

Any activity, including academic research inevitably has some degree of environmental impact. The research sought to minimise these aspects, for example by using public transport for travel to meetings and using telephone interviews to avoid the need for travel. Unnecessary printing was avoided wherever possible, and paper was reused and recycled paper where possible.

Chapter 4

Findings

This chapter presents the data that was gathered and the subsequent findings. It starts with a brief history of Shell and contrasts its position with that of the companies which opposed reductions in greenhouse gas emissions.

The main section explores the development of Shell's position on climate change in the form of a narrative. It draws on the full range of data sources and explores the significance of a range of factors that led Shell to take the position it did.

It finally summarises the case study as a whole.

4.1 Opening vignette

The following two extracts demonstrate the difference in position between the parts of the fossil fuel industry which were vehemently opposed to controls on greenhouse gas emissions such as the Kyoto protocol, and Shell which has taken a much more progressive position.

The following paragraph is a public statement made in 1998 by Cor Herkstroter, then head of Shell.

> "The issue of global climate change, its probable causes and potential consequences has been one of the most widely debated topics of recent years. And rightly so: the state of the world we leave for future generations must concern us, and since the balance of scientific evidence suggests a link between climate change and human activity, we have a responsibility to take prudent precautionary action. But it is ironic that many of those human activities have also brought huge benefits in terms of economic and social development. Is it now necessary, for the long term future of the planet, to limit such development? Or will there be technical solutions which allow development to continue? Unfortunately we cannot wait to have all the answers, and this dilemma is one which, on balance, has been sensibly tackled in the Kyoto Protocol. [...] We in Shell, on the whole, welcome the outcome of Kyoto" (Herkstroter 1998).

In contrast, the next paragraph is the abstract from what was claimed to be an authoritative scientific guide to climate change. It was linked to the Global Climate Coalition's website as part of their justification for opposing proposals to greenhouse gas emissions. It was published in 2001, four years after the Kyoto Protocol was agreed and three years after Cor Herkstroter's statement.

> "A review of the scientific literature concerning the environmental consequences of increased levels of atmospheric carbon dioxide, the most prominent greenhouse gas contributed by human activities, leads to the conclusion that increases during the twentieth century have produced no deleterious effects upon global climate or temperature. Increased carbon dioxide has, however, markedly increased the growth rates of plants as inferred from numerous laboratory and field experiments. There is no clear evidence, nor unique attribution, of the global effects of anthropogenic CO_2 on climate. Meaningful assessments of the environmental impacts of anthropogenic CO_2 are not yet possible because model estimates of global and regional changes in climate on interannual, decadal and centennial time scales remain highly uncertain" (Soon et al. 2001 p2).

These two extracts graphically illustrate the gap between Shell, which was supporting precautionary action, and those parts of the energy industry that were still trying to deny that climate change was an important issue that had to be addressed. This chapter tells the story of the development of Shell's position in relation to the increasing knowledge and changing debate surrounding climate change.

4.2 A brief history of Shell

The history of Shell began in 1833 when "Marcus Samuel opened a small shop in London, selling sea shells to Victorian natural history enthusiasts. It soon became a thriving import - export business" which then turned its attention to shipping coal (Shell 2006). The company's interest in oil started in 1892 when they built the first tanker capable of travelling safely through the Suez Canal (Sampson 1975 p44). This was commissioned specifically to transport Russian kerosene to the Far East for use in lamps and cooking stoves. Shell, whose full name was Shell Transport and Trading, started out fundamentally as a trading company, sourcing and marketing fuel. This is in contrast to the other major oil companies which started out in exploration and production.

Through the 1890s Shell built up a network of storage facilities and a substantial fleet of tankers. This allowed it to compete on a global basis with America's Standard Oil, at the time the world's largest oil company. Having a global presence protected Shell against Standard oil's practice of using inflated prices in selected markets to subsidise artificially low prices in other markets and force more localised companies out of business (Sampson 1975 p45). Over the following years Marcus Samuel rejected several offers by Standard to buy Shell.

At around this time a Dutch company, Royal Dutch was formed "to develop oil fields in Asia" (Shell 2006). After several years the two companies decided to form a partnership and "in 1907, the Royal Dutch / Shell [Transport and Trading] Group of companies was created to incorporate their operations worldwide" (Shell 2006). This integrated the complete supply chain from exploration and production, through transport and refining to marketing to final products. The joint venture between Royal Dutch and Shell "was run by a committee of managing directors, which varied from about five to eight who came from different backgrounds, and there was a chairman of the committee" (Booth 2006).

The group expanded in the early 20th century, buying up other companies, as "the mass production of cars had opened a vast new market" (Shell 2006). "The First World War saw many of Shell's operations closed down or confiscated; but others were added or expanded, particularly in North America" (Shell 2006). Between the wars Shell expanded, and also started selling aviation fuel, but "during the

Second World War, Shell once again lost businesses, tankers and properties, but supported the Allied Governments with fuel supplies and chemical production" (Shell 2006).

In the late 1930s Sir Henry Deterding had been Chair of the Committee of Directors for around thirty years and had built a considerable personal power base within the organisation. He then started to become increasingly dictatorial and erratic, and built increasingly close ties with the Nazis causing "great embarrassment" to his fellow directors, who finally "eased him out of the post" (Sampson 1975. p81; Frynas 2003 p278). This is of historical significance because it led to decisive action to curb the personal power, and potential excesses, of the chairman. Shell strengthened the board as a whole with the chair becoming a 'first among equals' rather than an individual leader (Sampson 1975 p198; Frynas 2003 p275).

After the Second War and into the 50's and 60's Shell expanded its facilities and production to meet increased demand until it was supplying "almost one seventh of the worlds oil products" (Shell 2006). Natural gas supplies were also being developed during this period and by the end of the 70's Shell was a major supplier in Europe. "In the 1970's, Shell made major oil and gas discoveries in the North Sea, just off the coast of Scotland" (Shell 2006). "Meanwhile Shell was developing its long term interests in coal and metals" (Shell 2006).

In the mid 1990s Shell experienced two major crises over the disposal of the Brent Spar and alleged complicity in the execution of Ken Sara-Wiwa, a human rights campaigner in Nigeria. These generated a large amount of negative publicity and had a significant influence on Shell management's thinking at the time.

Shell has always regarded itself as a sophisticated, cosmopolitan company with considerable experience in international politics. This seems to be because of its history as an international trading company, whereas most the other oil majors began in exploration and production, mainly in the United States (Sampson 1975 p11). Sampson claims that historically Shell has tended to be an introspective, self contained organisation with a "lofty and sceptical attitude towards governments" (Sampson 1975 p12). "The company has [...] been the most

internationally minded [of the major oil companies] and the most flexible, preoccupied with markets more than production" (Sampson 1975 p52).

There also seems to be a general agreement among authors (Frynas 2003; Grant 2003; Oechsle & Henderson 2000; Skjærseth & Skodvin 2001) that Shell has a distinctive management structure that sets it apart from other major oil companies. This is a result of Shell's historical roots as a partnership between two companies, and also because of the actions taken following Sir Henry Deterding's departure.

In contrast to the more traditional hierarchical structures of most of the major oil companies, Shell, for much of its history has had a more decentralised matrix type structure. The two parent companies did not carry out any oil operations themselves. They acted as the financial and strategic centres of the organisation. Day to day operations were carried out by separate companies, which were assisted by service companies based in the UK and the Netherlands, providing support such as research and development" (Frynas 2003 p276). Until the end of the 1990s Shell was made up of "over 300 operating entities spread across 144 countries" (Oechsle & Henderson 2000 p75).

Frynas (2003) makes the point that "Shell is used to controversy. The company faced a reputational dent in the late 1930s over the pro-Hitler sympathies of the late Henry Deterding [...] who was behind the 1907 alliance between Royal Dutch and Shell Transport and Trading. In the 1970s and 1980s Shell was accused of breaking international oil sanctions against the illegal Rhodesian regime and it faced criticism over its investments in apartheid South Africa, but all of these were eclipsed by Shell's Brent Spar and its Nigerian Troubles" in the 1990s (Frynas 2003 p278).

4.3 Shell and climate change

Early evidence of climate change

In the late 1950s scientific knowledge about mankind's influence on the planet as a whole was growing. To study this in more detail a global network of monitoring stations was set up to study "planetary processes and human influence on them" (Grubb, Vrolijk and Brack 1999 p4). Almost immediately rising concentrations of atmospheric carbon dioxide were measured. "A decade later, a study by the Massachusetts Institute of Technology (MIT) documented concerns about possible climate change, and by 1970 the Secretary General of the United Nations was sufficiently concerned to mention the possibility of a 'catastrophic warming effect' in his report on the environment" (Grubb et al. 1999 p4). Research into climate change was continued through the late 1970s and 1980s by the UN Environment Programme and the World Meteorological Organisation. This led to the formation of the Intergovernmental Panel on Climate Change (IPCC) in 1988 (Grubb et al. 1999 p4).

The World Commission on Environment and Development (WCED), later known as the Brundtland Commission was formed by the United Nations in 1983 and Chaired by former Norwegian Prime Minister Gro Harlem Brundtland. In 1987 it published a report called Our Common Future which detailed a wide range of environmental issues and their potential impact on mankind.

In this report sustainable development was defined as "development that meets the need of the present without compromising the ability of future generations to meet their own needs" (Brundtland 1987). This also gave birth to the concept of the three pillars of sustainable development: the need to balance economic, social and environmental development.

By the late 1980s the media were regularly producing articles on climate change, linking it to other environmental issues as well as the potential human costs. For example in August 1987 The Guardian expressed concern over the effects of rising sea levels on coastal cities (Veitch & Radford 1987). In December 1998 there was a story entitled "Scotland will soon run out of snow", linking climate change to environmental changes and the impacts on tourism (McCarthy 1998).

Rising awareness of climate change within the fossil fuel industry

Mark Moody Stewart, who was the chair of Shell's Committee of Directors from 1998 until 2001, said that the first time he personally became aware of carbon dioxide as a global issue was when he saw a copy of the Club of Rome report in 1972:

> "which basically said that we're all going to hell in hand basket, we're going to run out of everything, which to me was manifestly not plausible, however there is one graph in that book which I remember striking me and that's a measurement of the carbon dioxide concentrations that were taken [in Hawaii ...] which showed that over a long period of time the concentration of carbon dioxide in the atmosphere had actually increased, and I didn't know anything about green house gasses, but it struck me that there really was, [...] a discernable global effect" (Moody-Stuart 2006)

Lord Oxburgh, former chief executive of Shell UK, said that the first statements on climate change from within the oil industry, which he was aware of, were in 1982:

> "one of the earliest statements by a senior oil company person on climate change, was a paper written in, [...] 1982, by a man called Dr David, it recognise the importance of carbon dioxide accumulations in the atmosphere, its influence on global warming, it would have to be managed, and that man was, I think, the chief scientist, or chief technology officer at Exxon Mobil" (Oxburgh 2006).

He went on to explain that the important thing was that it took time for the discussion about climate change to be translated into policies within Shell:

> "people talk about [climate change] the critical time is when it moves from chat into policy, and that really didn't happen to later, until the mid, late 90s" (Oxburgh 2006).

It is clear that some individuals within Shell were aware of the issue of climate change in the late 1980s and early 1990s, but that it did not become integrated into Shell's policies until the mid 1990s.

Formation of the IPCC

In 1988 the United Nations General Assembly set up the Intergovernmental Panel on Climate Change (IPCC). The IPCC describes its purpose as providing "decision makers and others interested in climate change with an objective source of information" and to provide "scientific, technical and socio-economic information in a policy-relevant but policy neutral way to decision makers" (IPCC 2008).

Legget (2000) summarises the IPCC's mission as "to pool the opinion of as many scientists and policy experts as possible, in as many countries as possible [to produce] consensus reports on the science of global warming, the probable impacts, and potential policy responses" (Leggett 2000 p2).

The IPCC represented a consultation process unprecedented in both size and scope. "It has evolved into what is probably the most extensive and carefully constructed intergovernmental advisory process ever known in international relations" (Grubb et al 1999 p4). The IPCC has published regular reports on the state of scientific knowledge on climate change.

These reports were the starting point for the political momentum that gathered for a treaty to control the emission of carbon dioxide, and other green house gasses. The resulting negotiations were a long and complex process that continued until their climax with the agreement of the Kyoto Protocol on 11th December 1997 (Grubb et al. 1999 xvii).

At this point in time the Chair of Shell's board of directors was Sir Peter Holmes. Samson described him as "an improbable chairman" who preferred climbing and exploration to the business world but who "looked thoroughly in command in his corporate suite at the top of Shell tower, relaxed and immaculate. But he still seemed to have come from an open air world, detached from his more conventional colleagues, as if he had climbed up the building with crampons" (Sampson 2002). He also had a reputation for taking risks, had a passionate interest in other cultures, and controversially helped prepare members of the African National Congress (ANC) for government while they were still fighting the apartheid regime in South Africa.

Formation of the Global Climate Coalition

As climate change became an issue for scientific and then public concern, some elements within industry sought to deny its significance. They particularly focused on the scientific uncertainties that existed and the potential threat to economic development and employment if action was enforced to reduce greenhouse gas emissions.

The situation was comparable to the tobacco industry after concerns about lung cancer, the CFC industry when there was growing evidence of ozone depletion, and more recently in the fishing industry with growing concerns over depletion of fish stocks. The industry response was to seek to refute or influence scientific evidence, and play on concerns about the economic impacts and potential job losses that may result from enforced controls. This can be seen as a traditional response when an industry is forced to react to a threat to its core product.

The fossil fuel industries' strongest expression of these reactions was in the formation of the Global Climate Coalition (GCC) in 1989, in response to the formation of the IPCC in 1988. Its members included representatives of the major oil companies, including Shell, other fossil fuel interests and several motor vehicle manufacturers. It was "in fact the main umbrella organisation for the oil, coal and auto industries' response to the global warming issue" (Leggett 2000 p10/11). The focus of the Coalition was to resist efforts to reduce the use of fossil fuels. It concentrated its efforts on highlighting, or as some would argue, misrepresenting, the scientific uncertainties over climate change at the time (Leggett 2000 p30).

Leggett (2000) argues that although fiercely competitive, the major oil companies have historically worked together when faced with major threats, that there is a long history of behind the scenes deals and at times they have effectively operated as a cartel. (Leggett 2000 p32).

Head of Shell UK speaks out on need for action on climate change

In 1990 Sir John Collins became head of Shell UK. Just before taking the job he spoke of the changes that would be needed to curb greenhouse gas emissions, he said "there will have to be a shift towards cleaner technology, fuel efficiency

and a search for greener products. As providers of services, the oil companies would have an additional role to promote energy saving and efficiency" (Bell 1990).

Rowell (1997), writing about Shell, quoted Sir John Collins as having said "The biggest challenge facing the energy industry is the global environment and global warming, [...] the possible consequences of man-made global warming are so worrying that concerted international action is clearly called for" (Rowell 1997). It is clear that some senior individuals at Shell were concerned about the potential seriousness of climate change at this point. If someone who was about to become head of Shell UK was making such statements, the board of Shell must have been aware of the issue.

The year 1990 was also the year in which the first IPCC report was published. It concluded that "rising concentrations of carbon dioxide and other greenhouse gasses in the atmosphere were caused by human activities and would cause global temperatures to rise, with accompanying climatic changes" (Grubb et al. 1999 p5).

Roger Booth who had for a long time been involved in Shell's alternative energy projects, and headed Shell Renewables just after its creation, spoke about the influence of the first IPCC report:

> "quite a few of us had actually got hold of the first
> assessment report, the IPCC's assessment report, and
> started reading this, and talking about it internally, it wasn't at
> board level, that I was aware of" (Booth 2006).

It's clear that there was a significant awareness of the issue of climate change among technical staff in the company in the mid to late 1990s, even if there was still the possibility that it had not necessarily been seriously discussed by the most senior management.

Through the early 1990s there were a series of IPCC meetings in the UK, Sweden, Switzerland, Holland, China, and the USA, with much debate over the

probability and potential consequences of climate change. Scientist from interest groups such as Greenpeace and energy companies including Shell, BP and Exxon were present as observers, and were allowed to make suggestions (Leggett 2000 p3).

There was enormous political inertia resisting controls on green house gasses, particularly from the United States government (Leggett 2000 p198). This was seen as being largely the result of a close relationship between the government and groups with vested interests such as the oil and coal industries, and automotive manufacturers, who felt they would suffer if there were forced reductions in carbon emissions. Other countries with large fossil fuel reserves such as Saudi Arabia, Australia and the Soviet Union were also opposed to binding restrictions (Leggett 2000).

Those objecting to reductions in greenhouse gas emissions also pointed out that there was little point in developed countries taking unilateral action as countries such as China and India would, in the future, be emitting far more carbon dioxide than the western world. They also claimed that forcing developed countries to act alone would put their industry at a disadvantage, and increase unemployment (Leggett 2000 p203/4). Governments in China and India have of course been understandably reluctant to put restrictions on their developing economies until the richer and more polluting Western countries have made commitments themselves.

There were a number of countries which were particularly vocal in supporting cuts in greenhouse gas emissions, primarily in the European Union. The low lying Pacific Island states also made powerful statements about the threat to their futures from rising sea levels as a result of climate change (Leggett 2000 p13).

Some supporters of greenhouse gas reductions even argued that reducing emissions would stimulate new cleaner technologies and would actually prove to be an economic boost. Companies in Denmark and Germany in particular have become leaders in renewable energy technology and have profited from their expertise.

The European Union argued for shorter term initial targets to be set as it "feared that commitments that were outside the range of visible electoral cycles or typical industry financial horizons would be taken as an invitation to delay. The converse US concern was that early targets would prove costly to implement – also that they would leave insufficient time for the institutional and political developments required [this was] reinforced by economic studies that purported to show that it would be cheaper to defer abatement action, and do more later" (Grubb et al. 1999 p69). The electricity industry was particularly worried "about the possible costs of being forced prematurely to retire its coal fired power stations" (Grubb et al. 1999 p70). It would be more cost efficient to implement measures when old equipment came to the end of its natural life and would have to be replaced anyway.

At this time, Sir Peter Holmes, chair of the committee of directors of Shell, was quoted as saying that "there will be no solar century, just another oil century. 'There really isn't an alternative, so far anyway, to the internal combustion engine', he reasoned, "Oil and gas will be major industries fifty, and probably a hundred years from now.'" (Leggett 2000 p71).

While he was not necessarily dismissing renewable energy he felt he was being realistic about the prospects of it becoming a practical alternative to fossil fuels in the near future. There are two implications to this: first, if he was committed to reductions in carbon emissions the only solutions were technological ones to improve fuel efficiency or capture the carbon emissions. The second is that Shell felt that it could legitimately maintain fossil fuel production as its core business for decades to come.

European measures to cut greenhouse gas emissions

In early 1992 European Community ministers discussed plans to impose a tax on carbon emissions. The aim was to "fundamentally change industries perception of energy use" (Spinks 1992), in order to reduce carbon dioxide emissions. This would also have given European negotiators more credibility at the upcoming Rio Summit, and allowed them to take a leading role in pushing for further controls.

According to Spinks (1992) the Dutch government, which had already "introduced eco-energy levies and [planned] another series of far-reaching environmental taxes", proposed to unilaterally impose the carbon tax (Spinks 1992). As a result a number of energy intensive companies, including Shell, protested to the Dutch government, claiming that their international competitiveness was being compromised and that they might be forced to move production out of the Netherlands to other countries. "To soften the blow" they were then offered financial compensation "in return for energy savings" (Spinks 1992).

Despite support from many of the European governments, including Germany and the Netherlands, plans for a European Community wide tax to control carbon emissions came to a halt two years after the Rio Summit. "Britain was blamed by European Union environment ministers for blocking their attempt to devise a long-term strategy to control greenhouse gas emissions" (Carvel 1994). Ironically, half a decade later when the New Labour government was in power, Britain was then seen as one of the leaders in making a commitment to address climate change. At this point the government enthusiastically supported the Kyoto protocol, and along with other European countries, started to impose energy related taxes to control greenhouse gas emissions (Cowe & Gow 1999).

The Rio "Earth Summit"

In 1992 the United Nations held a conference in Rio on the environment and global development. Its purpose was to encourage governments to work towards sustainable economic development. Climate change was an important part of the summit, but other areas of discussion included biodiversity, protection of forests, water supply and reducing the environmental impact of transport. Several legally binding conventions, as well as many non binding conventions and statements of intent were signed by the participating governments (UN 1997).

The Rio summit was portrayed by some environmental campaigners as "the last chance to save the planet" who were then disappointed that more was not achieved (Beckerman 1992).

At this time the Global Climate Coalition was involved in "aggressive lobbying at international climate negotiation meetings and raising concern about unemployment that it claims would result from emissions regulations. It distributed a video to hundreds of journalists claiming that increased levels of carbon dioxide would increase crop production and help feed the hungry people of the world. In the lead up to the Earth Summit at Rio de Janeiro in 1992, the GCC and other industry interests successfully lobbied the US government to avoid mandatory emissions controls" (Sourcewatch 2006).

Leggett (2000) claims that although much of the GCC's campaigning was clearly propaganda, many people in the oil industry genuinely thought that global warming was not a serious issue; that they simply didn't have the information to be able to see the reality of the situation (Leggett 2000 p61).

Roger Booth from Shell talked about the early growth of awareness within the organisation about sustainability and particularly climate change:

> "up to the first Rio conference there were quite a few of us
> within Shell who [...] had got hold of the Bruntland report, you
> know one of the key input documents into Rio. [...] I know
> that there was a very senior Shell presence in Rio for the first
> Earth Summit, and there were quite a few people within
> group planning, the think tank organisation within Shell at that
> stage which started to pick up the issue of sustainable
> development, and particularly the issue of climate change.
> Now the first reactions from many people was almost
> bordering on, how can I put it, how can people be so arrogant
> to think that something as insignificant as man can be having
> an effect on the totality of the planet" (Booth 2006).

It is interesting that at the first Earth Summit in Rio, five years before Kyoto, there was a "very senior Shell presence". The top management at Shell must therefore have at least been aware of the issues of climate change, and been taking its potential implications for the business seriously. It is hard to believe that they would not have been informed about the full range of opinions on climate change. It is also interesting to note that some individuals thought that it was arrogant to think of man as being powerful enough to have an influence on the global climate.

Formation of the Business Council for Sustainable Development

In the early 1990s, and specifically in the run up to the Rio Summit, the Business Council for Sustainable Development was formed by Swiss businessman Stephan Schmidheiny. Its purpose was to produce a Business Manifesto outlining the way in which "business could act as a catalyst for change towards the achievement of sustainable development" (WBCSD 2007). Shell was the only major oil company among the group's fifty founding members, who signed the initial declaration that "reflects a serious concern with the environment and a belief that business has an important role to play in righting the wrongs that it has perpetrated" (Cowe 1992). The declaration however goes on to say that economic growth and free trade are the best mechanisms for improving environmental and social conditions and spreading good practice. The initial focus of the group's actions was primarily on ozone depletion and air and water pollution (Cowe 1992).

This demonstrates that at the time of the Rio Summit, five years before Kyoto, senior managers in Shell were aware of growing concern over environmental issues and significantly, wanted to be seen to be part of something positive being done to tackle them.

There was however a noticeable difference in the position of Shell headquarters, based in Europe, which was moving towards a more progressive position with regard to climate change and Shell's operations in the United States which were still resisting:

> "[in mid 1990s] you'd almost got a dichotomy in Shell, you'd got the Americans going one way, toeing the Ford, General Motors, Exxon line, and you got Shell international going the other way, which was, we're part of the problem, but we're also part of the solution so lets talk" [Booth 2006].

This demonstrates that the US division of Shell was in some ways quite independent from Shell headquarters in Europe. It could be argued that organisational polices towards climate change were influenced by public opinion in the countries concerned.

United States vs. European public opinion

Benjamin Diss, from Platform London, thought that the fundamental reason why Shell (and also BP) have been more open and willing to acknowledge the issues is because they are based in Europe as opposed to America. He said there have been:

> "fundamental differences in the public discourse on climate change in Europe vs. that in the United States [...] it is still credible for US companies to express public scepticism about the science of climate change, a position which the public in Europe would simply not accept" (Diss 2006).

The implication is therefore that Shell took a more open and progressive position on climate change in the mid 1990s because public opinion in Europe, where Shell has its headquarters, was beginning to move in that direction.

Diss compared BP's position in Europe to its position the United States with regard to its advertising. In a similar way to Shell he said that the way in which the oil company followed public opinion is evident in its advertising:

> BP has "recognisably similar adverts in Britain and in the US [it] urged its UK audience to 'calculate your carbon footprint - it's a start' while telling US consumers 'we're investing X million dollars finding new oil and gas in the Gulf of Mexico - it's a start', obviously playing respectively to the primary concern over oil in the UK: climate change, and the primary concern over oil in the US: reliance on foreign imports" (Diss 2006).

This also raises the question of the extent to which the companies are truly committed to sustainability, and to what extent they are simply trying to respond to public opinion with 'green wash'.

Roger Booth also talked about differences between companies based in the US and Europe, but seemed to think that the differences were somewhat less profound. He felt that the main difference was the time scales involved in planning, and the perceived importance of share prices.

> "I think there's also been a significant difference between European commercial enterprises and the American. We used to jokingly say that in Shell terms in London and the Hague that the long term thinking in our company was 25 years, because [...] if you were doing a big natural gas project it would take you probably eight years to get it up from first discussion to actually coming on-line, and the thing will be running for maybe thirty, forty years. Whereas in American business although even in the oil business they still have those same time horizons but their long term thinking was the third quarter this year, because the main interest was: what is your share price doing, if the share price was going down, you know you're in deep trouble" (Booth 2006).

He did however think that there have been changes in the European way of thinking:

> "Now unfortunately I think there's been a change in European business, that there's now a much greater emphasis on the share price and the markets. So the thinking has perhaps come a little bit more short term than it was a few years ago" (Booth 2006).

Lord Oxburgh spoke at some length about the differences between Europe and North America. He spoke more about the differences in the public debate, and the ways in which the debate has been shaped by particular organisations.

> "in terms of attitude to global warming and climate change I think there are, there are differences. I think that Exxon has had a very powerful negative influence on the acceptance of climate change in the United States, on the other hand a significant number of major US companies have now said it is for real, and we have to do something about it. I think if I remember rightly, Wal-Mart has, certainly GE has, and Chevron – Texaco have taken this position, but don't underestimate the influence of the largest company in the world" (Oxburgh 2006).

He then goes on to explain where he feels the roots of the debate lay in North America.

> "in North America there has been a separate problem which may have indeed fed the views of Lee Raymond [former chief executive of Exxon] to some extent: that is that in North America, by and large the early groups to start talking about climate change, and seeking public attention were the fairly extreme environmental groups, the Sierra Club was very important, but there were a number of others as well. Now these are all groups to which the industrial right, if you like, if I can use such a term, to which the industrial right had been viscerally opposed" (Oxburgh 2006).

He continued:

> "The debate started polarised, because the two parties to the debate had already been polarised by years of antagonism, and then the fact that one of them [the environmental lobby] started saying something that was right and sensible got completely blown away" (Oxburgh 2006).

When discussing the differences between attitudes towards environmental issues in Europe and the United States, Mark Moody-Stuart said:

> "I think industry in general in the United States was less convinced, concerned, whatever, and one of the things about global companies is that the people who work for global companies are part of the society in which they work, so if the society regards something as unacceptable, or whatever, it influences people which in turn influences the company" (Moody-Stuart 2006).

While this seems a reasonable argument, when Mark Moody-Stuart was explicitly asked whether being based in Europe as opposed to the States made a significant difference, he said:

> "I don't think necessarily, because there are companies in the States, DuPont for example, so [...] no I don't think [so] necessarily (Moody-Stuart 2006).

Shell scenario report (New Frontiers & Barricades)

In 1992 Shell produced a scenario report with two contrasting scenarios: New Frontiers and Barricades. At this time the Soviet Union had recently collapsed, and there appeared to be a global trend towards political and financial liberalisation. This is clearly reflected in the scenarios for this period, and they also picked out steady growth but with turbulence and an increasing pace of change as defining characteristic of the time.

The first scenario, New Frontiers, envisages more global cooperation and an acknowledgment of the interdependence of global financial and political institutions. There would be rapid growth in third world countries leading to huge but risky business opportunities. Growth in western countries would be slower. There would be a rapid growth in demand for raw materials and energy, but energy growth would be slower than economic growth because of increased efficiency. There would be growth in the use of all energy sources: oil, coal, gas and unconventional oils and significant new renewable energy sources, particularly photovoltaics. The world would experience severe environmental pressures that would require global agreements, but these would be hard to achieve. Developing countries would argue that they needed to put economic development first, and would act to tackle local pollution as they became wealthier. Global problems, especially the environment would be tackled cooperatively, but there would also be increasing grass roots public pressure. This pressure would force companies to be more accountable for their actions (Shell 1992).

The second scenario, Barricades, envisages increased fear of change which would lead to increased protectionism and insular thinking. Some developing countries would prosper, but many would fail, increasing the gap between rich and poor. People would become disillusioned by liberalisation, leading to more conflict between single issue groups and the establishment. There would then be difficulty in establishing new infrastructure such as power stations, roads and railways because of local opposition. International tensions would lead to a lack of investment in new oil and gas infrastructure; the United States and Europe would become more reliant on imports from turbulent regions. Fears over energy security and environmental damage would lead to draconian local regulation.

There would then be a weakening of international institutions and therefore of the ability to tackle problems globally (Shell 1992).

In this pair of scenarios there is an acknowledgment that environmental problems may be a significant issue in the future; this is a full five years before Kyoto. The arguments that some were making against taking a more sustainable course of action, that were developed in the late 1980s and the run up to the Rio summit in 1992, are repeated in these scenarios. These are that controls on carbon dioxide emissions would compromise economic development, both in the West, and also in the Third World where tackling poverty should take precedence. These were precisely the arguments that were also used at the Kyoto negotiations, although they were not supported by Shell.

The scenarios suggest a general agreement that energy demand will rise, but progressively more slowly in countries that have more developed economies and are moving away from manufacturing industries, and that precise levels of energy demand growth will depend on overall economic growth.

When asked to describe the importance of scenarios in the planning process at Shell, Roger Booth said:

> "[they are a] totally and utterly integral part of the strategic management [process], the scenarios were developed about every three years. As soon as they had finished one round they would start onto another and they would be basically trying to look at issues that would affect the business long them. The scenarios would be presented to the committee of managing directors and had to be approved by the committee [...] then the next round of planning was the business plans [...] Shell UK would have to prepare its business plans for each of its individual operations, its exploration and production, refining petrochemicals and what have you, marketing. They would have to then assess those business plans against the currently prevailing approved scenarios" (Booth 2006).

When asked to confirm that the scenarios were not just academic exercises, he went on:

> "you needed to have a robust business plan [the scenarios] were not in any way at all [just academic exercises] they were

fed right the way through the whole of the global
organisation, they still are, so that's a crucial point" (Booth
2006).

The significance of this is that as soon as the issue of climate change appears in the scenarios it becomes known to the senior management and strategic planners throughout the Shell organisation. More than this, the strategic planners are forced to take account of the scenarios in their plans. The question about the seriousness of climate change and the appropriate response remains, but strategists cannot ignore the issue.

Lord Oxburgh said that he thought scenario planning was an important reason why Shell picked up the importance of climate change earlier than other companies in the oil industry:

> "Shell for thirty years or more [...] has had a reputation for
> scenarios, in fact I think it was Shell that really said that,
> future plans are all very well, but in fact the future was pretty
> uncertain, and so what we're going to do is put effort into
> exploring the possibilities for the future rather than saying
> there is a single future which we're going to bet on" (Oxburgh
> 2006).

The result was that Shell planners were actively looking for issues that had the potential to impact on the business, to a much greater extent than some other companies.

In contrast to the accepted company line, Betty Flowers (2003), editor of the final Shell scenarios from 1992, suggests that at times some managers were not fully committed to the scenario planning process. She recalls an incident where, in an informal setting, she asked the head of Group Planning how to make a set of scenarios "the best Shell had ever produced" and he replied "keep it short". When she said ok "he laughed as if [she] had made a joke" (Flowers 2003 p29). She goes on to talk about managers listening to the scenarios but it being a challenge to "incorporate managers into the scenario process, while making best use of their limited time" and getting them to "take ownership of various alternative futures and experiment with them" (Flowers 2003 p30).

Flowers does not suggest that managers are opposed to scenario planning, but one gets the feeling that at times some individuals see the scenario team as something separate and possibly even a distraction from their own work (Flowers 2003).

Cor Herkstroter becomes head of Shell

In February 1993 Cor Herkstroter, previously the head of the Dutch division of the Shell group, replaced Sir Peter Holmes as the Chair of the Committee of Directors. Commenting on this, an article in the Financial Times said: "The Royal Dutch Shell Group is the world's second largest oil company and its management succession tends to be orderly and dictated by a retirement age of 60" (FT 1993).

It is evident that changes in the leadership of the management committee at Shell are controlled and disciplined and that they are unlikely to lead to radical changes in policies. There was also a tradition that the post of Chair of the Committee of Directors alternated between Dutch and English committee members.

When Mark Moody-Stuart, Chair of the Committee of Directors in the late 1990s, was asked about Shell's first official statements on climate change, he said that there were:

> "statements in old speeches going back quite along way going back to I think something like '93' [...] on 25th October 1993, Cor Herkstroter who was then chairman said "the greatest dilemma remains the possibility of climate change, this is a truly global issue as of course carbon dioxide is produced everywhere in the world and whatever and wherever its source is it affects all of us, scientific uncertainty does remain, but the consequences of global climate change will be very significant so it is understandable that governments wish to take a precautionary method'" (Moody-Stuart 2006).

When asked if there were other people in Shell who had been aware of the issue of climate change earlier, Lord Oxburgh said:

> "Oh yes, [but] in an organisation like that leadership at the highest level is important" (Oxburgh 2006).

Again the point is made that some individuals within the organisation may have been well aware of the issue, but that policy doesn't change until senior management become convinced of its importance to the business.

On the same subject, Jeremy Leggett (2000) argues that in the early 1990's many individuals in the oil industry were beginning to take environmental issues as a whole more seriously, but that it took much longer for climate change to be taken seriously. They simply seemed to be denying that it was a problem, saying that the world depended on oil and that wasn't going to change: end of discussion (Leggett 2000 p219). This would imply a degree of cognitive distortion on the part of senior industry individuals; they were effectively saying that climate change wasn't a problem because there were no obvious solutions.

By the mid 1990s however a change was starting to become evident. There was a growing scientific evidence, and public awareness, that climate change needed to be taken seriously. Companies were starting to find that they were generating significant levels of negative publicity by continuing to deny the significance of climate change and particularly from being part of the Global Climate Coalition.

Brent Spar

In 1995 the Brent Spar was the cause of some major negative publicity for Shell. This installation was a large floating oil storage facility operated by Shell UK. It was put in place in 1976 in the Brent oil field in the North Sea. It was used to hold oil before it was loaded into tankers to be taken for refining. In 1991, after fifteen years of operation, new pipelines meant that the facility was no longer required and it ceased operation (Nuttall 1995).

Various options for it's decommission and dismantling were investigated. The structure was unique and there was no precedent for decommissioning similar facilities. The possibility of bringing it ashore and dismantling the structure was considered impractical for a number of reasons (Shell 2007 #2).

It was therefore considered safer and cheaper to sink the Brent Spar, in the North Atlantic, and this was not considered to pose a significant environmental threat.

An independent study of the proposal was carried out by marine experts at Aberdeen University, and the UK government gave its approval for the disposal plan. No objections were raised by any other parties (Shell 2007 #2).

Brent Spar then became the focus of a protest by Greenpeace, claiming that sinking it in deep water would cause unacceptable environmental damage and set a precedent for the disposal of other facilities. The protest against Shell escalated, particularly in Germany where there were boycotts of Shell reducing Shell's sales by around 20%. One of the company's petrol stations was firebombed and another damaged by gunfire. Some local authorities in Germany refused to buy fuel from Shell and the Chancellor, Helmut Kohl, made a personal protest to John Major the British Prime Minister (Nuttall et al 1995). The debate over the best way of disposing of the Brent Spar was also the cause a public dispute between different Shell divisions in Europe (Leggett 2000 p210-12).

The sinking of the Brent Spar was finally abandoned by Shell U.K. "apparently after having been instructed by the Group's Committee of Managing Directors to do so" (Frynas 2003 p279). It was then towed to Norway where it was later dismantled, and parts of its structure recycled as a ferry terminal.

After the event it became apparent that Greenpeace had made serious errors in estimating the quantity of toxic materials on board and that Shell was right in saying that disposal at sea would not have been a significant environmental threat (Schoon 1995). The damage had however been done, the Brent Spar incident had seriously damaged Shell's reputation in Europe, and became a symbol of what some people regarded as the oil industry's disregard for the environment.

What was most significant was the internal reaction within Shell. The public response to Brent Spar had completely taken Shell management by surprise. They believed that they had followed the correct procedures and had chosen a method of disposal that was the best practical environmental option. They had then been forced to alter course by an environmental organisation that caught the public's imagination, and furthermore had used incorrect data to do so. Shell came to realise that simply doing what was technically 'the right thing' was not enough, and that it had to have public opinion on its side as well. Shell realised

that it had to make itself aware of, and take into account, the public's perceptions and beliefs, instead of simply relying on being able to demonstrate the facts (Shell 2007 #2).

Roger Booth gave a Shell insider's view of the protests surrounding Brent Spar:

> "there was terrific anti Shell reaction in particularly Germany and Holland, including machine gunning and bombing of filling stations" (Booth 2006).

He summed up Shell's realisation that they had mishandled the resulting public reaction as:

> "hang on, we might do the right thing, we may be doing the correct procedures and all the rest, but if our customers don't believe we're behaving correctly, we're done" (Booth 2006).

The events surrounding Brent Spa were described by Lord Oxburgh in very similar terms:

> "I think over the years there has been an attitude in Shell that if you do what you believe is right and do it properly and honestly it doesn't actually matter what anyone thinks, just a sort of be true unto yourself philosophy. When it came to Brent Spar every single requirement which any regulatory body had imposed had been met, every box had been ticked and they went ahead, but I think it was without realising the world had changed, and that having all the boxes ticked, having all the permissions wasn't enough, and in a world of instant global communications, and certainly increased environmental awareness there were other considerations, and that leapt up and hit Shell hard" (Oxburgh 2006).

When asked if he thought Shell had been taken by surprise, he said:

> "They were, I think Shell was taken by surprise, simply because of this almost, I mean [the organisation] is open in one way, but inward looking in another, and saying do it right, and do it by the law and you're fine, and it wasn't enough and further more I think for exactly those reasons Shell had paid relatively little attention to external communications, to what these days is called spin, PR and that sort of thing, and in consequence I think Shell totally lost the PR battle, if you can describe it that way over Brent Spar" (Oxburgh 2006).

Nigeria

Shell first started shipping oil from Nigeria in 1958, at the time the country was a British protectorate. Nigeria has held a significant proportion of Shell's oil reserves, in 2004 Nigeria contributed "about 10% of Shell's global production and was home of some of its most promising reserves" (BBC 2004#4).

In 1960 Nigeria was granted full independence, but it was beset by ethnic, religious and economic tensions. In 1966 there was a military coup which led to a bloody civil war, followed by a period of military rule and political and civil unrest that lasted until the end of the 1990s. A new president was democratically elected in 1999. Since then the country has struggled to rebuild its economy and there are still serious problems with corruption and continuing civil unrest.

The problems for Shell have been principally in the Niger Delta region, the home of the Ogoni people. The Ogoni have for a long time been campaigning for an increased share of oil revenues to be put into local development, and also against the environmental degradation that has resulted from the growth of the oil industry. In 1994 a local writer and environmental campaigner, Ken Saro-Wiwa, was arrested and accused of being involved in the murder of local leaders, a charge he denied (Bishop 1994). After what was generally regarded as an unfair trial he was executed, to the condemnation of the international community.

As Shell was one of the major companies which was benefiting from the Nigerian oil, and had close links with the Government, it was regarded as being complicit in Saro-Wiwa's death. Shell did in fact publicly call for leniency and the organisation argued that its own codes of ethical conduct forbade it from becoming involved in an individual country's domestic politics (Shell 2007#3).

Even taking this into account Shell admitted that in the context of Nigeria they "sometimes feed conflict by the way we award contracts, gain access to land, and deal with community representatives" and that "as part of an industry contributing to the problem, we are prepared to help" but that "Government and local communities must take the lead" (BBC 2004#4). Again Shell claimed that the situation was largely beyond its control. It paid substantial tax revenues to the Nigerian government over which it had no control. If the government then failed to

distribute the money fairly it inevitably caused resentment, some of this was targeted towards Shell.

Shell claims to be acting in a responsible way to reduce its environmental impact in the Niger Delta (Shell 2007#3). Shell has however been responsible for building facilities and pipelines that have disrupted local fishing grounds. Shell pipelines have leaked oil, sometimes due to sabotage, which has contaminated land and water. Shell also burns off unwanted gas which is a major cause of localised acid rain which contaminates land and water and causes local health problems as well as being a major source of greenhouse gasses. Flaring gas in this way has actually been illegal in Nigeria since 1984, and Shell admitted that it would not meet its target of ending all flaring by 2008 (FOE 2005).

A BBC article from 2004 concludes by saying "Shell's image has been badly damaged in recent years and despite efforts it is still seen by many as a company that damages the environment and supports corrupt regimes" (BBC 2004#4).

Roger Booth discussed Shell's experiences in Nigeria:

> "almost simultaneously in Nigeria there was the whole issue of Ken Sara-Wiwa's trial, who was in my view then murdered by the government, and although Shell had been trying very hard through it's links with government to get the government to change their view, you know there's only so much you can do. We had people climbing up the outside of Shell Centre and hanging a banner that said something like Shell murderers, or what have you. And that again brought the whole issue of corporate social responsibility right to the very top of the Shell agenda. Shell had for many years a code of practice, a statement of business principles which included no bribing and good corporate behaviour, that was totally reviewed and given a much higher profile" (Booth 2006).

Lord Oxburgh, former chief executive of Shell UK felt that although the events in Nigeria were serious for Shell, they were quite different to those surrounding Brent Spar:

> [Nigeria is a] "very, very complicated country, I don't know that Shell could ever have done anything different in Nigeria.

At the time Shell went into Nigeria it was a relatively stable, pretty optimistic, post colonial period, things looked very good, and you go in, and it is the nature of the oil and gas business that you go in and you have to make massive investments, I mean billions, and your payback comes back over the next 40 years, so all your money is up front, now if you have a war, like the Biafran war [civil war in Nigeria], which totally polarised a country which had been really pretty harmonious, under colonial rule [...] companies with major investments there really had a very difficult time" (Oxburgh 2006).

He showed an understanding of the effects a major oil company can have in a developing country, but also painted a picture of Shell almost being a victim of political forces within Nigeria:

"Shell has always operated policies of trying to be a good neighbour, because any place you go into and you extract natural resources, I mean you're perturbing the system in some way, you're disturbing the local environment in some respect, and so Shell, over the years has done all sorts of things with schools and hospitals and things like that, but the people who are really active here, the political activists see this as all buying off locals and without too much difficulty you can put a very negative spin on it" (Oxburgh 2006).

He then spoke of Shell falling victim to increasing corruption and lawlessness, and especially how small scale theft of oil from pipelines was being overshadowed by mafia type organised crime. Lord Oxburgh went on to say that people from Shell had been trying to resolve local problems, as much as their remit would allow but that they were being deliberately misrepresented by organisations with political agendas:

"every time I've been there I've been talking to people working, people in the Delta, and a lot of people trying hard to find a new way forward, but it's difficult, and I have to say, quite a number of NGO organisations I believe behave rather amorally in Nigeria. We published something called the Shell Report, in which we traditionally list those projects which have succeeded and those which have failed, and we tend to have about 50% failure rate, and that's actually quite good for Nigeria, [...] anyway we've had several organisations go out to Nigeria, take our Shell report, visit those [projects] which we say have failed and then come back and write damming reports on the failure of Shell's initiatives in Nigeria, it just makes me sick frankly" (Oxburgh 2006).

Brent Spar and Nigeria were situations where Shell management did what they felt was the right thing, and was then taken by surprise by the strength of the public reaction. This is confirmed by Mark Moody-Stuart in an interview with the Guardian newspaper: "Those were seminal experiences for Shell, as Sir Mark acknowledges. 'It caused us collectively to say we were getting something wrong. As a systematic company, we went back to first principles'" (Macalister 2003).

In a demonstration of Shell's commitment to learn from these events it revised its statement of General Business Principles to include an emphasis on communicating and engaging with stakeholders:

> "[it] was totally reviewed and given a much higher profile again throughout the company, and I think that linked in because if you like the whole climate change issue is part of corporate social responsibility" (Booth 2006).

When questioned in more depth about the effect the negative public reaction had on Shell's decision making process, Roger Booth replied:

> [it] "meant that the decision making approach changed, Shell had always prided itself on being probably a world leader in terms of [...] engineering excellence and best practice and it then realised that that is not enough, because you need to take the public with you, and they don't necessarily have the same high opinion of you as you have of yourself. So you have to get involved in stakeholder analysis, you know you have to bring people with you, you can't say of course we're the best, because quite often you'll be dealing with non technical people" (Booth 2006).

The last sentence of this quote is interesting, referring to the need for business people, working in a technical world, to take into account public misunderstanding, due to their lack of technical knowledge of the situation. It leads to the subject of trust, something that was acknowledged as being important in a speech to the World Economic Forum, by Philip Watts in 2003. The speech concentrates on businesses contributions to sustainable development, and the trust element is summed up by the following extracts,

> "What really matters is performance - being seen to do what we say, and deliver what we promise. That is surely the only way to build trust. But it is bound to be a long haul, and as in the child's game of snakes and ladders, any failure can send you sliding straight back again" (Watts 2003).

"Regaining trust is a challenge for one organisation. It is clearly a much greater one for business as a whole, where one bad apple can taint us all" (Watts 2003).

The last comment could be seen as a thinly veiled attack on the less environmentally conscious American oil companies. This speech was made in relation to sustainable development, but ironically came shortly before a major scandal involving Shell overstating oil reserves that lead to the departure of several of the company's most senior executives, including Philip Watts himself.

Public trust in Shell was undoubtedly weakened by the negative publicity surrounding Brent Spar and Nigeria. It is understandable that individuals at Shell felt that the organisation had in some ways been treated unfairly, or had been caught out by events that it couldn't have foreseen. It is clear however that there was recognition among senior Shell executives that the company needed to learn lessons, and reconsider the way it engages with the public, the media and other stakeholders.

Cor Herkstroter (1996) summed up his thoughts on Shell's reaction to the crises of 1995 in a public speech "we have found that we have to communicate more, both internally and externally. [...] We were, perhaps, excessively focused on internal matters, and we failed to fully understand the need to provide information to the general public" (Herkstroter 1996 p3).

Mark Moody Stewart, a former chair of Shell's directors made the same point. He was quoted by Frynas (2003) as saying "Shell is undergoing fundamental change. We have learned the hard way that we must listen, engage and respond to other stakeholder groups" (Frynas 2003 p280). Paul Skinner (2003), another senior Shell executive, emphasised that "earning trust and corporate reputation" was something that Shell was actively engaged in (Skinner 2003 p9). He acknowledged that this was an area that had previously been a weakness of Shell's and that it had been a "revelation to the present generation of managers that trust is essential for big business" (Skinner 2003 p9).

Skjærseth and Skodvin (2001) make the same point, but frame it in terms of legitimacy: Shell's experiences of adverse public reaction over Brent Spar and its

operations in Nigeria "seem to be perceived by Shell as a real threat to its corporate legitimacy and credibility" (Skjærseth & Skodvin 2001 p53). It is clear that these events came as a shock to Shell and had a profound effect on the thinking within the organisation.

Frynas (2003) felt that another particularly import factor at this time was Shell's long history of building strong relations with national governments. This had historically proved to be a successful strategy, but then appeared to have failed. The support it had from the British government at the time of Brent Spar had not helped it in its fight against Greenpeace, and its links with the regime in Nigeria, that was widely perceived as corrupt, had severely dented Shell's reputation. This coincided with the rise in the influence of nongovernmental organisations, particularly in the environmental field.

When discussing the influence the events surrounding Brent Spar and Nigeria had on Shell, Schwartz and Gibb (1999) said "on a superficial level, it is possible to say that these events had no short term effect on the company – at the end of the year its stock price and profits were at record highs. On a deeper level, the experience had a profound effect. [...] These events and the strength of public reaction seemed to take Shell management by surprise. The company's planning process was one that many companies admired and had wished to emulate – but to outsiders, it did not appear to have helped Shell anticipate what happened to it in Nigeria and the North Sea. So management was doubly hit – by the protests themselves and by its own internal failure to anticipate or prevent the crises. As a Shell executive later told us, the company suddenly realised 'how out of tune we were with the world around us'" (Schwartz & Gibb 1999 p28).

Schwartz and Gibb compared Shell's reaction to what might have been expected from an organisation in this situation. "Most companies under attack go immediately into defensive mode and stay there. Although defence was part of Shell's response, it was, to the company's credit not all of it" (Schwartz & Gibb 1999 p28). The authors go on to discuss how Shell learned from what had happened, that they realised that they had to take more account of public opinion, and that they needed "a more open dialogue with other stakeholders in their environment – particularly the environmental and human rights NGOs whose

protests had been the strongest" (Schwartz & Gibb 1999 p28). Shell went on to publish its first social responsibility report, in 1998, the year after its previous chair, Cor Herkstroter, had "stated that the board could not accept activist demand for such a report" (Schwartz & Gibb 1999 p28).

It appears that when confronted with the Brent Spar crisis Shell's initial reaction was to buffer, defending itself against Greenpeace's campaign against it, however it soon realised that its position was untenable, and then backed down. After the initial crisis had passed Shell started to adopt bridging strategies, attempting to build relationships with a wider range of stakeholders such as Greenpeace. "Shell embarked on a series of internal reforms, which reflected it's newly found interest in engaging with stakeholders and social responsibility issues" (Frynas 2003 p280).

Scenario report (Just do it & 'Big me')

In 1995 Shell produced its next scenario report. At this point in time there was increasing globalisation, liberalisation and the advancement of new technology. There appeared to be a growing consensus, particularly in the West, about the importance of free market economics. The well educated and entrepreneurial tended to do well, while others felt increasing insecurity and a growing inequality (Shell 1995). The two scenarios are summarised below.

The first scenario, entitled 'Just do it', envisaged an increase in individualisation, an emphasis on innovation and creativity, and the ability to rapidly take advantage of fleeting opportunities. Virtual and ad hoc alliances would be created through information technology to tackle particular issues. The scenario saw organisations becoming more fluid, and market forces were seen as more effective than government actions. As a result some people became unhappy with the relentless pace of change and develop a feeling of political alienation. There would be a slow growth in energy demand due to de-materialisation and improved technology (Shell 1995).

The second scenario, entitled 'Big Me', foresaw an increased emphasis on relationships and placing the 'good of the group' above that of the individual.

Asian economies would be the most successful, where networks of trust minimise the expense of contracts and legal action. There would be higher productivity due to individuals' focus on a common cause, and there would also be more emphasis on governments and institutional actors. The West in particular would struggle with growing crime and inequality. There would be an emphasis on economies of scale, and companies would also find that they must take more account of their employees and public opinions (Shell 1995).

In both of these scenarios there is surprisingly little specific mention of environmental issues. This was only two years before Kyoto, and there appear to be fewer signs than in the 1992 scenarios that environmental issues would become significant to Shell. It is also interesting that the importance of employee and public opinion is described; this would appear to be a reaction to Shell's recent experiences. This would tend to suggest that the scenarios were as much based on past and current events as an exploration of potential future ones.

Roger Booth also commented on the scenarios from the mid 1990s, saying that they suggested oil and gas production would peak by around 2030 because of dwindling finite reserves:

> "those scenarios were touted around the world to places like the World Bank, the Dutch government, the UK government, I think even to Washington [...] and the IPCC, [they were] basically along the lines of saying, look if this is the future, carbon emissions are going to peak anyway [...] I can't remember the exact year, by around about 2020, 2030 and then will go into decline anyway" (Booth 2006).

The implication was that greenhouse gas emissions would peak and start to fall naturally because of shortages of fossil fuel reserves and therefore it wasn't an issue that had to be addressed with any additional regulatory controls.

Internal agency

There were individuals within Shell, who wanted the organisation to take an even stronger line on climate change and move more decisively towards renewable energy. They found that they were often unable to make changes as quickly as they would have liked. Roger Booth, who headed Shell's renewable energy

division, spoke of his personal frustration at the difficulty in being able to persuade others within Shell to see energy from a more sustainable perspective:

> "I used an analogy when I was leading up the renewable energy group in Shell, some days I imagined myself outside Shell Centre with a big rope over my shoulder that was attached to the building, [...] if I try and pull too hard, they'll just cut the bloody rope and I'll fall on my face" (Booth 2006).

> "It's a little bit like the water drop and the stone, you know if you've got a continual drip of water onto a solid rock, give it a few million years and it'll have drilled a hole clean through the rock, it may have split it in two" (Booth 2006).

This point of view comes from someone who was a senior Shell manager, who had a particular interest in renewable energy, but not someone at the very top. In contrast, Sir Mark Moody-Stuart who was first head of Shell UK and then Chair of the Board of Directors, when asked if he ever felt he was constrained by powers beyond his control, said:

> "No, no, no, you'd give up working if you felt you couldn't make changes in any organisation, particularly if you're in a leading position" (Moody-Stuart 2006)

The difference between Moody-Stuart and Booth is of course that Moody-Stuart was at the very top of the company and was therefore in a much stronger position to promote his views on particular policies and strategies. Moody-Stuart was also looking at the company as a whole, where as Booth had a particular interest in renewable energy.

Roger Booth went on to talk about organisational inertia, and the fact that it takes time to turn around any large organisation. He talks about the need to have a critical mass of individuals before positions really start to change:

> "If you've got one person who's pushing a particular point of view and a need for change in a particular direction within a group of senior managers of say 50, he or she may well get laughed at, once you've reached a critical mass, which may mean getting the top person on your side, but once you've got 25, 30% to thinking this way you'll start to have an influence, and when it's 60% the other 40% will come along fairly quickly" (Booth 2006).

It is clear than even though there was early support for a proactive position on climate change at the top of Shell, and also among individuals throughout the organisation, the inertia of an organisation of this size will mean that it takes time to convince people, change attitudes and put such policies in place. There will inevitably also be individuals who have competing interests who would wish to block them.

External agency

As well as internal forces empowering or limiting individuals' ability to bring about changes, the organisation will be influenced by external factors. Roger Booth discussed the fact that a large multinational corporation has to satisfy a wide range of stakeholders:

> "as the manager of a major company, you've got a whole
> host of stakeholders whose livelihoods you have to look after,
> [...] your employees, your customers, and your shareholders,
> and I can't remember what Shell's turnover is these days, [...]
> it's huge, on which a lot of people are highly reliant, both
> inside and outside the company" (Booth 2006).

The implication is almost that the management has a moral duty to maintain the company's profitability to support those individuals who are dependent on it for their income, whether that is in the form of wages, pensions or other investments. There is also a pressure to maintain the company's share price: any management team whose actions cause a fall in the value of the company is likely to find their position under question:

> "one of my [trusted] contacts once told me that he had been
> told by a senior executive in BP that every time Lord Browne
> made public speeches about renewables and or climate
> change, the share price fell. This does show the dilemma
> faced by major multi-national oil companies" (Booth 2006).

Whether or not this is actually true, the important point is that there is the perception that talking publicly about tackling climate change makes the stock market nervous about the company, and has an adverse affect on the share price. It illustrates the fact that even if a powerful chief executive were committed to large scale investment in renewables, in a public company they would still have to maintain investors support or risk compromising their position.

Benjamin Diss seems to agree with this point of view, saying that he thinks that senior management effectively have their hands tied when it come to investment decisions, because they have to maximise their share price. An oil company's share price is related to the rate at which the company finds new oil reserves:

> "fundamentally, the share price of BP, Shell et al. is driven by the companies reserve replacement ratio. This is the amount of new oil and gas which the companies find versus the amount of oil and gas which they pull out of the ground during the same period of time. Companies are well aware this is what financial analysts and large investors look for, and this is the reason that renewables represent a tiny proportion of these companies overall turnover" (Diss 2006).

The implication is that any suggestion that the company is transferring significant levels of investment away from oil and into renewable energy will immediately have a negative impact on the share price. This will continue to be the case as long as renewable energy continues to be less profitable than fossil fuel and the financial markets perceive these companies to be fundamentally oil & gas producers. As Jeroen Van der Veer recently said publicly "despite investment in renewables, oil and gas would remain his company's core business for many years to come" (Diss 2006).

In contrast however an article in the Guardian newspaper, in January 2007, argued that although Exxon hadn't fundamentally changed its views on climate change it was being forced to soften its public statements and better explain its position. This was particularly because its perceived hard line stance was having a negative impact on investors (Macalister 2007). This demonstrates the profound influence that stock markets perceptions can have on a company.

There has been particular public criticism of large multinational companies for their apparent lack of social and environmental responsibility. In an interview, also published in the Guardian, Mark Moody-Stuart felt that the overall power of multinational corporations to make a global impact was more limited than many people realised:

> "'Big companies are still feared, but equally the expectations from developing countries and NGOs about the power and

resources they can bring to eradicating poverty or other
complex issues are exaggerated', says Sir Mark" (Macalister
2003).

Cor Herkstroter made the same point, that whatever an individual company does it will always be a relatively small contribution to the global picture:

> "Our contribution to targets for greenhouse gas reductions
> may be small in global terms. Greenhouse gas emissions
> come from so many of society's activities that no single
> source is ever a large part of the total. But the climate change
> problem will only be tackled successfully if everyone plays
> their part" (Herkstroter 1998).

These statements could be seen as an excuse for lack of action by big companies such as Shell. The counter argument is however that the actions of a large, and highly visible organisation can make a powerful symbolic statement and as a result influence wider changes in attitudes and the policies of others.

Shell being part of the broader debate

There have been areas where Shell's actions have had an influence on the positions of others. Shell's expertise in scenario development is widely recognised. Jeroen van der Veer, the current chief executive said "we often contribute our scenario expertise to help identify and address challenges of common concern, such as those of sustainable development, long term energy needs or, more recently, the fight against AIDS and for development in Africa" (van der Veer 2005). Van der Veer then goes on to say that new developments making the scenario methodology more robust will help Shell to "make further contributions to the wider debates about the fundamental questions that face us all" (van der Veer 2005).

This shows that Shell is actively trying to be part of wider public debates, and can therefore influence the way those debates are shaped. A similar point was made by David Hone, chief climate change advisor at Shell. He said that by being seen to be proactive in the environmental debate, and by developing robust research and relevant expertises, Shell's reputation, credibility and legitimacy are enhanced. Shell's opinions are respected and Shell is consulted and listened to when new legislation or regulation is being proposed (Hone 2006). This was the

case with emissions trading. Shell developed internal emissions trading schemes within the company to help them understand the implications it would have for the organisation. When trading schemes were being developed by the European Union, Shell was consulted as a respected organisation with extensive relevant experience of the area. This of course gives Shell an opportunity to shape policy development in ways that are advantageous to its long term strategy.

Roger Booth said that Shell certainly discussed issues with national governments, but gave a more mixed message about influencing the public debate:

> "In terms of public debate I'm not certain how much, I would say they have always been [...] fairly active in discussions with government bodies [...] so yes I think they want to be part of that wider debate, [but] going to the public level I'm not really certain because it is very difficult to get to the public level, but what they have done for many years is being involved in education and providing Shell briefing and things like that for schools on energy and issues of that nature" (Booth 2006).

When questioned about whether he thought Shell's actions had influenced the wider debate Lord Oxburgh said:

> "You can't tell, I have to say yes, but I think in all these things it's a matter of water wearing away a stone, all sorts of people speaking, talking, pushing in this direction, I think has an effect, [but] I think it's very difficult to identify particular singular events" (Oxburgh 2006).

David Hone acknowledged that being able to influence a wider public debate was an important secondary benefit to Shell of being seen to be leading the way in the development of climate change policy:

> "I mean its not the principal driver, the principal driver is making sure our business is sustainable in the long term, [but], yes I think that we have got some external relations benefit that is of value to the company, because we've certainly had times when we've had external relations bad press on environmental issues, so I'd be lying to say it didn't matter, because it does" (Hone 2006).

In July 1996, just prior to climate change negotiations in Geneva a group of energy and motor manufacturers sent a letter to the US president urging him to protect their interests at the negotiations. This group included Shell, but not however BP (Leggett 2000 p246). It is striking that even after all the public statements made by senior Shell executives, the company in the United States still put its name to a call to restrict controls on greenhouse gas emissions.

In December of the same year Maarten van den Bergh, former Vice-Chairman of the Committee of Managing Directors, spoke at a gas industry conference. He said that he thought that there would be a considerable expansion in the use of natural gas as a fuel (van den Bergh 1996). He stated that electricity production using gas was increasing, and "at a time of increasing environmental concern, gas has significant environmental advantages over other fuels". He goes on to say that the main challenges to the industry are likely to come from "rapidly changing technology, commercial practices and regulatory systems" (van den Bergh 1996).

On the subject of climate change he says "It seems increasingly probable that man-made carbon dioxide, largely from burning fossil fuels, may have an impact on global climate - though much less than previously feared. So it is clearly prudent for the international community to consider possible precautionary measures. I believe that energy industries must play a constructive role in that debate. However it is vital that any measures should not unnecessarily inhibit the economic and technological progress on which people depend for higher standards of living and a better environment" (van den Bergh 1996).

This would seem to be a somewhat mixed message; on the one hand we should be considering precautionary measures with regard to climate change, while on the other Shell sees opportunities to expanding its gas production, a product that still contributes of climate change. Van den Bergh also emphasises the importance of not inhibiting economic development, which he links to creating a better environment. This is an argument that can be traced back to the Brundtland definition of sustainable development and one that is often used by those wishing to defend commercial interests against environmental issues.

Van den Bergh states that he thinks the energy industry should play a role in the debate, implying that Shell has a degree of agency in shaping that debate. He says that Shell is a leading expert in the field, but also alludes to the importance of maintaining the organisation's image and legitimacy, cautioning against taking excessive risks as the company's reputation is of paramount importance (van den Bergh 1996).

BP leaves the Global Climate Coalition

In October 1996 BP withdrew from GCC after their chairman, Lord Browne (1997), admitted that "the time to consider the policy dimensions of climate change is not when the link between greenhouse gases and climate change is conclusively proven, but when the possibility cannot be discounted. We in BP have reached that point" (Browne 1997).

This speech by Lord Brown was seen as a significant change in the company's position. It is notable that Lord Browne was advocating precautionary action as the evidence for mankind's contribution to climate change was strengthening, even though there was no conclusive proof of a link.

In March 1997 Cor Herkstroter (1997), then chair of Shell's committee of directors, gave a speech at Erasmus University in Rotterdam entitled 'Contributing to a sustainable future'. He outlined two main themes in global development: "growing worldwide consensus among policy makers on the value of economic liberalisation" and "widespread concern about the capacity of the earth to sustain expanding population and material consumption" (Herkstroter 1997).

On the subject of climate change he said that "despite many remaining uncertainties [...] I believe that there is now sufficient evidence to support prudent precautionary action" (Herkstroter 1997). Coming a few months before Kyoto this can clearly be seen as support for the protocol.

Herkstroter saw no reason to be pessimistic about climate change, saying that although environmental campaigners "provide a timely warning about the possibility of irreversible damage to the natural systems on which we depend" (Herkstroter 1997), humans are very capable of adapting. He saw technical solutions as the answer to environmental problems, while allowing essential economic growth. He emphasised Shell's ability to contribute to technological developments, therefore implying that Shell would be able to profit from the development of solutions to climate change.

He made a claim for Shell's legitimacy, discussing its involvement in sustainable development initiatives and also emphasising that Shell "makes a considerable contribution to society – supplying essential energy and other products, creating wealth and acting as a force for progress". He then however described a perceived lack of agency "we are as much at the mercy of [...] global forces as any other enterprise" despite having said that Shell is "one of the world's largest multinational enterprises" (Herkstroter 1997).

He was positive about the fact that Shell worked in places "where others withdraw or keep away" and that Shell companies were "committed to expressing support for fundamental human rights within their legitimate role as businesses" (Herkstroter 1997). This would appear to be an attempt to defend Shell's legitimacy and put its actions in Nigeria in a positive light. Finally he emphasised the importance of a wider, better informed debate and the need for governments to make clear decisions, while saying that Shell "will make a constructive contribution to this vital debate" (Herkstroter 1997).

In April 1997, a former Chair of Shell's Committee of Directors, John Jennings (1997), gave a speech to the Business and the Environment Programme in Cambridge, England. He started by invoking the Brundtland definition of sustainable development saying that the primary role of commercial companies in sustainable development "must be in the economic sphere – providing essential goods and services and creating wealth through employment, and the payment of taxes and dividends, in a continuing process of innovation and investment. To do

this they must remain profitable" (Jennings 1997). In making the point about profitability he could be seen as defending Shell's right to continue exploiting fossil fuels which were, and still are, more profitable than renewable energy sources.

On the subject of climate change he said that fossil fuels would continue to supply the majority of the world's growing energy requirements, because "there is simply no practical alternative" in the next few decades, and that this "represents a challenge to the notion of environmental sustainability" (Jennings 1997). Again he said that although there was still uncertainty over climate change we should have been taking precautionary action, through energy efficiency, reducing the impact of fossil fuels and developing renewable energy (Jennings 1997). These mainly involve market forces and technical solutions.

Jennings thought that it was very likely that demand for fossil fuels would continue to grow until at least 2020, but that some of the IPCC scenarios for carbon dioxide emissions were too high and that "Shell planners are contributing to work to develop new IPCC scenarios" with lower emissions projections (Jennings 1997). This is a clear case where Shell's expertise was giving them the ability to influence a wider debate that could potentially change policy making, to their own advantage.

Also in April 1997 Philip Watts, who later became chair of Shell's committee of directors, made a speech entitled: Challenges to the International Petroleum Industry.

He spoke particularly of the challenges caused by political and economic liberalisation around the world, and also mentioned population growth and climate change. He said one of the most significant challenges was loss of public trust in large companies, with growing expectations that their actions should show more ethical responsibility: "business used to say 'trust me'. Now people say 'tell me' and, increasingly, 'show me'" (Watts 1997).

Watts spoke at length about Shell's experiences with the crises involving Brent Spar and Nigeria. He was well placed to comment, having been chief executive of Shell Nigeria from 1991 to 1994 and European Coordinator at the time of Brent Spar. He said that the main lessons Shell learnt was that they needed to improve their communications and initiate "discussion with a wide spectrum of opinion formers in different societies" (Watts 1997). The main emphasis seems to have been on communications and building legitimacy rather than actually changing the way Shell operates. He interestingly also said that the company must as a first priority "be true to our values and principles" while it may "further enhance shareholder value" while not acting "in a way that is outside the legitimate role of business" (Watts 1997). Placing the organisations values and principles above shareholder value would appear to be a bold message, and one that may be hard to implement in practice.

Watts did not discuss climate change in any detail, and only briefly mentioned the possibility of developing renewable energy. He concluded by emphasising Shell's commitment to sustainable development and maintaining its credibility by making sure it did "not have, or be perceived to have, a gap between policy and performance" (Watts 1997).

Formation of Shell Renewables

In October 1997 Shell announced the formation of Shell Renewables as a fifth core business alongside oil and gas Exploration & Production, Trading & Shipping, Gas & Power and Shell Chemicals. It was initially announced that Shell would invest $250 million over five years in renewable energy, principally on the production of photovoltaic cells, biomass forestry and research into wind power. Shell's aim was to "capture a 10 per cent share of the growing worldwide market by 2005" (Weston 1997). "Jim Dawson, [head of Shell Renewables] said: We're not doing this for the hell of it. We think there are commercially viable opportunities" (Weston 1997).

Commenting on the announcement, Jeremy Leggett (2000) said "It seemed that Shell was in the process of emulating BP. Indeed it was even possible that they were trying to outdo their rival" (Leggett 2000 p277). It was then announced that

the level of investment would be increased to $500 million and Jim Dawson, said Shell was undergoing a "step change". The investment in renewable energy, although impressive should however be seen in the context of Shell's total annual investment of around $10 billion (Leggett 2000 p277).

At this time many other oil companies were still denying the significance of global warming, particularly Lee Raymond, the Chief Executive of Exxon, who said that we should keep developing fossil fuels "for both economic growth and the eradication of poverty" in the third world (Leggett 2000 p278). Although Exxon's denial of climate change as an issue is in pretty stark contrast to Shell's position, the underlying arguments about the importance of economic and social development are not so dissimilar.

The economic benefits to Shell of renewable energy were emphasised by Rob Hastings (2006), vice president of Shell Renewables in 2006. He said that Shell was primarily interested in exploiting commercially viable technology, rather than taking financial risks investing in the development of as yet unproven technology (Hastings 2006). Leggett (2000) also argued that Shell seemed to be more interested in investing in technology that was already profitable, rather than trying to develop new technologies or potential opportunities (Leggett 2000 p209). This implies that whatever Shell might have been saying about 'doing the right thing' its investment in renewable energy sources seem to have been primarily driven by a long term economic motive.

In contrast to Shell's enthusiasm for renewable energy in the late 1990s, Roger Booth talked about their troubled early experiences of diversifying out of fossil fuels:

> "to be quite honest Shell's earlier diversification efforts had been complete cock-ups, for example they bought into coal, and then they put people who'd been marketing fuel oil into marketing coal and most of them weren't even aware that there was a very significant difference in quality between northern and southern hemisphere coals [as well as that] they bought into a nuclear venture with another company, and both partners thought the other one knew something about it and when they actually got around the table they found that neither knew anything about it at all" (Booth 2006).

It is clear that Shell was not put off diversification by its earlier experiences, there are however important differences. Shell's moves into coal and nuclear in the 1970s and early 1980s were motivated by concerns about oil supply and prices, where as moves into renewables were as much a result of a public debate and the improving viability of new energy sources.

In November 1997 Philip Watts, then managing director of Shell, spoke at the "Energy and the Environment" conference in Venezuela. He said that Shell supported "measures aimed at decreasing the carbon intensity of the primary energy supply", but also that "reasonably priced energy is essential to all forms of development and that [...] fossil fuels have a continuing major roll" (Watts 1997).

He went on to say that "pumping six billion tonnes of man-made carbon dioxide into the atmosphere is, at a minimum, a risky experiment" and so Shell is "committed to meeting the energy needs of the worlds growing population in the decades to come while investing in cleaner energy sources namely, renewables and gas and reducing the impact of fossil fuels both in production and use" (Watts 1997).

Watts acknowledges that Shell is "almost totally dependent on carbon-based fuels" and that "some will find [their] position surprising, perhaps even disturbing" but that it "is only common sense to use all our resources [...] in the most efficient ways possible" (Watts 1997).

He discusses the fact that better communications mean that people's expectations are changing, that they want companies to be more accountable, and that they are finding "there is simply no hiding place any longer. We live in a transparent world a CNN world and we have to adapt to that, whether we like it or not" (Watts 1997). Watts was acknowledging that there were a new group of stakeholders whose opinion had to be accounted for, and that the public debate on issues was something that Shell couldn't afford to ignore. The use of the phrase 'whether we like it or not' implies that Shell was being forced into a position and that it was experiencing a lack of agency that they were unaccustomed to.

Watts says that "the Kyoto talks will probably give us some indication of the way in which the climate change debate is going to affect us" (Watts 1997). This sounds rather passive, although he says that Shell has endeavoured to make its own operations more efficient and reduce carbon dioxide emissions, as much as anything in order to reduce costs. He says that there is still a great deal of uncertainty over the science of climate change, but that "prudent precautionary action" should be taken (Watts 1997). He claims that "free markets are the most effective way to decrease hydrocarbon emissions" (Watts 1997).

Watts says that Shell's "commitment to contribute to sustainable development is now written into [the] Statement of General Business Principles [the] company's constitution. So it is [...] carved in stone for us" (Watts 1997). This would seem to be a strong commitment from an oil company, but he then emphasises the importance of balancing sustainable economic, social and environmental development. He uses the need for economic and social development to support the continuing availability of reasonably priced, freely available energy, which may in reality not be environmentally sustainable.

Again we have a senior Shell manager saying that the company is committed to sustainable development, then qualifying the commitment to environmental sustainability by invoking the Brundtland definition of sustainable development and emphasising the importance of economic and social development.

The role played by government policy
Lord Oxburgh (2006) talked about the way in which companies have been hampered by the lack of government policy direction on climate change. This is a particular problem because of the time scales involved in building new infrastructure. He said that companies needed a clear policy framework and a level playing field that would allow them to invest in sustainable projects, but as they are commercial companies they have to invest in ways that will bring an acceptable return:

> "given the lead time in building new stations, companies want to build them for the future that's going to be there, and the cheapest thing [may be] to build a dirty gas station, but no

one wants to invest in a station which is cheap but which is not going to be compliant with future regulations and emissions restraints, so people aren't doing that, they're holding back" (Oxburgh 2006)

"Now I think the combination of the high oil price and regulation within the EU we are going to see a significant increase in the bio fuel business, [...] and I would not be too surprised to see us perhaps on 40% bio fuel by 2020 and you know if the EU decides that's where we're going companies have no choice but to follow, and we will" (Oxburgh 2006)

Government, or international, policies can restrict or empower a company in its long term investments. Whatever a company like Shell would like to be able to do, in any particular country it will always to some extent be at the mercy of government policies.

Mark Moody-Stuart talks of the way in which governments can over react, and how political considerations can influence policy making, with governments targeting companies because it is less politically damaging than placing the responsibility with consumers:

"the worry is when politicians suddenly get excited about it because they tend to then overreact and use foolish legislation, [...] and that's something we need to avoid, so what one needs to do [...] is to talk about what we should actually do, and I have quite strong views on that. [...] the market is a very effective mechanism for allocating resources but like anything it has its weaknesses, and it will not deliver this on its own in the timescale provided [...] so what we need is regulatory guidance of the market, not interfering with the market, now the danger is that business people hate regulation [...] with some justification, because politicians tend to apply painful things as far away from the consumer and voter as possible, and that means on companies, preferably big companies" (Moody-Stuart 2006).

Mark Moody-Stuart feels that a lack of clear well thought out government policy, especially in the United Kingdom, hampers companies strategic decision making, and may not lead to the best environmental results. However too specific policies may push companies in directions they don't necessarily want to go. He felt that market mechanisms were the best tool for encouraging the most efficient ways of achieving policy goals.

Shell supports the Kyoto Protocol

At the same time as the formation of Shell Renewables, and during the Kyoto negotiations the Chair of Shell's Committee of Directors, Cor Herkstroter, announced that Shell was calling for a global target of a 5% reduction in carbon dioxide emissions, by the year 2010. "As evidence of its seriousness of intent, Herkstroter said that the group was considering disposing of its coal assets" (Leggett 2000 p288). Shell did then sell its coal mining interests in South Africa, but it still maintained operations in Venezuela and Australia (Gow 1997).

When asked about the mood in Shell at the time of Kyoto, Mark Moody-Stuart said:

> "well we said that we were basically supportive of the process, I don't think people took a huge amount of interest in it, it wasn't a sort of, you know if you're involved in operations and so on, intergovernmental arguments are not the most exciting topic, so I think lots of people in Shell would not have paid any particular notice of it, even if we said that we were broadly supportive of it" (Moody-Stuart 2006)

Mark Moody-Stuart seemed strangely dismissive of Kyoto and unaware of Shell's involvement in the Kyoto summit meetings. This would seem to be at odds with what senior Shell managers had said previously about climate change and controls on greenhouse gas emissions. When pressed about the senior Shell presence at Kyoto, that Roger Booth mentioned, he said:

> "Possibly, possibly, I couldn't tell you who they were, some of our planning people probably" (Moody-Stuart 2006)

Signing of the Kyoto Protocol

The Kyoto protocol was finally agreed on 11th December 1997. It committed industrialised countries to reducing their greenhouse gas emissions by an average of 5.2% from 1990 levels by the year 2012 (Guardian 2006#1). This comprised of reductions, of differing amounts, for most countries involved, but increases for some including Australia, Iceland and Norway. The United States did not sign the protocol, nor did developing countries such as China or India.

The reductions were defined in terms of a carbon dioxide equivalent, and also included methane, and four other chemicals with greenhouse properties (Grubb et al. 1999 p73).

Participating countries are required to implement new policies or enhance current ones that will for example, enhance energy efficiency, promote more sustainable agriculture, reduce emissions in the transport sector or reduce market imperfections that run counter to the goal of reducing greenhouse gas emissions (Grubb et al. 1999 p125). Although the protocol stresses the importance of measuring emissions, of transparency and verifiability (Grubb et al. 1999 p143), there are no compulsory actions specified and no specific penalties for failure to take action. It is left to national policy makers to decide how to implement the protocol. There is therefore the potential for uncertainty, particularly for multinational organisations.

The protocol allows for emissions trading between parties that are subject to emissions control. This should allow total emissions to be reduced by the most cost efficient methods (Grubb et al. 1999 p89). Groups of countries, such as the European Union, were allowed to come together "to redistribute their emission commitments in ways that preserve the collective total" (Grubb et al. 1999 p122). The protocol also included provisions for offsetting carbon emissions for example by planting trees to absorb the carbon dioxide, or using other methods of sequestration (Grubb et al. 1999 p120).

The UK looked set to achieve its own target of a 12.5% reduction, mainly by changing from coal to gas fired electricity generation. "Carbon dioxide emissions from other sources in the UK continue to rise. [...] Many countries are not on course to meet their official targets [for example] Canada, one of the first countries to ratify the treaty has increased its emissions by 20% since 1990" (Guardian 2006#1).

The Kyoto Treaty runs until 2012, following that there is due to be another round of negotiations to discuss further efforts to control greenhouse gasses for the period 2013 – 2017.

In February 1998, two months after Kyoto, Cor Herkstroter (1998) reflected on the protocol. He said that the balance of evidence suggested that human activity was causing climate change and that "we have a responsibility to take precautionary action" (Herkstroter 1998). As a result he said he welcomed the Kyoto protocol, but said that climate change would be a difficult issue to tackle, because of disagreement on "scientific, social and political grounds" (Herkstroter 1998), but that it would also provide profitable opportunities for businesses. This was the first time that climate change was publicly mentioned by Shell as a potential business opportunity.

Having welcomed the Kyoto protocol he said "we should not, however, underestimate the challenges governments will face in meeting their targets" and that "Shell will respond according to decisions made in individual countries" (Herkstroter 1998). He goes on to say that Shell's "knowledge of the energy market will enable [it] to contribute to the debate on the right sort of policies, and to discuss practical measures with the governments concerned" (Herkstroter 1998). This is a clear example of Shell aiming to use its position and expertise to influence decision making in ways that will be beneficial to the company, or at the very least avoid harm to their interests. Herkstroter is also acknowledging that Shell is to some extent dependent on government decision making, before it can then make its own strategic decisions.

Herkstroter suggested that new technology would improve efficiency and provide cleaner energy sources, but that fossil fuels would continue to be the main energy source until the middle of the 21st century. He thought that "carbon dioxide emissions could peak in the period 2020 – 2030 [at] close to the target proposed by the European Union" (Herkstroter 1998). Although he acknowledges that action is needed, he implies that improved technology and market forces will provide a large part of the solution without extra interventions. This implicitly removes any responsibility for taking specific extra actions to combat climate change.

Herkstroter again emphasises the importance of continued economic development to combat global poverty, and said that this is "inextricably linked to the supply and

price of energy" (Herkstroter 1998), implicitly claiming legitimacy for Shell's core fossil fuel business. Herkstroter says that Shell will "continue to find and produce oil and gas, efficiently and responsibly, to fuel the next 20-30 years of economic growth" and that it will produce more efficient energy products, largely by investing in gas but also by investing significant sums in renewable energy (Herkstroter 1998). There seems to be a degree of cognitive distortion here. If Shell continues to maintain oil and gas production then carbon dioxide emission from its products would be unlikely to fall significantly and this doesn't seem compatible with the prudent precautionary action it was advocating.

Herkstroter concludes by saying that climate change is a complex and difficult problem, and that Shell will only ever be a small contributor, and that it "will only be tackled successfully if everybody plays their part" (Herkstroter 1998).

After the Kyoto protocol was completed Shell was closely involved in the continuing work of the IPCC:

> "post-Kyoto we had a small working group that got involved in
> the issues of the IPCC and a number of us were actually
> peer reviewers for the second assessment report, I assessed
> some of the technical papers which were particularly looking
> at the prospects for renewable energy. I know our group
> planners looked at the scenario work" (Booth 2006).

Again this would tend to contradict Mark Moody-Stuart's earlier statement that people in Shell didn't take a huge amount of interest in Kyoto and the IPCC.

On 13th March 1998 Philip Watts, future chair of Shell's directors, gave a speech at the World Business Council for Sustainable Development entitled: A commitment to sustainable development. He emphasised Shell's commitment by saying the company contributed to "economic development, social responsibility and environmental protection" but the company's "first and most important contribution is to help meet people's energy needs" (Watts 1998).

He said that Shell was developing supplies of natural gas that would replace coal and reduce carbon emissions as well as investing in renewable energy which

"could be supplying as much as half of the world's energy by 2050" (Watts 1998). The suggestion being that renewable energy was likely to be a major industry in the future and Shell wanted to be part of it. Shell was also working to reduce the environmental impact of a range of its fossil fuel products.

Watts made a case for Shell's legitimacy, saying it provided employment, made investments, paid taxes and provided returns for investors in the company (Watts 1998). He also talked of the need to respond to "conflicting demands and contradictory expectations" and he acknowledges the impact NGOs have had on the industry, saying that it had forced Shell to think about the way it operated (Watts 1998).

Watts finally acknowledged the Kyoto protocol, but emphasised that measures to control carbon emissions must be flexible and cost effective, and "must encourage, not inhibit, the creative drive of competitive business. This will only happen if business engages constructively with policy makers dispelling the perception that it seeks to block change" (Watts 1998). He emphasised the need for Shell to be involved in the debate over sustainable energy supplies, but implied a need for the company to be able to operate freely without the burden of restrictive legislation.

Publication of 'Profits and Principles'

Four months after Kyoto, on the 22nd April 1998 Shell Published a document called: 'Profits and Principles – does there have to be a choice?' This document was effectively Shell's first social responsibility report; a summary of the company's performance and a statement of its ethical business principles. It included a commitment to report on its performance, relative to a range of ethical business principles. Harrison explains that "the initiative is the product of nearly three years work and follows the public mauling Shell received over the execution of dissident Ken Saro-Wiwa by the Nigerian authorities and the row over the disposal of the Brent Spar oil platform" (Harrison 1998 p19).

It is significant that the production of this document is linked directly to the Brent Spar and Nigeria crises, it shows the impact that they had on the thinking of the

senior management. The initial response seems to have been very much in terms of openness and engaging with stakeholders, the implication being that Shell felt it had to explain its position more clearly rather than significantly change that position. This confirms earlier statements by senior Shell managers, that they felt they had actually done the right thing with regard to Brent Spar and Nigeria, but that they had lost the public relations battle to the environmental NGOs. Having said this, engaging more proactively with a range of stakeholders may have a long term influence on Shell's strategic planning.

In the 'Profits and Principles' document Shell claimed it would give social and environmental issues "as much importance as its financial performance. [According to Harrison] this groundbreaking initiative makes Shell unique among oil majors and marks one of the most important strategic shifts in the company's history" (Harrison 1998 p19). It is rather disingenuous however of Shell to claim that social and environmental issues would be given as much importance as its financial performance. This was never likely to be realistic given the financial demands of investors and shareholders.

Shell leaves the Global Climate Coalition

At the same time as the publication of 'Profit and Principles', Shell announced that it had decided to completely pull out of the Global Climate Coalition.

Crow (1998) explained that "Mark Moody-Stuart, at the time chairman of the UK arm of Shell, said the company had a fundamental difference of opinion with other members of the Global Climate Coalition, the US lobby group. Shell's position has been diverging from other members for some time, he said. After the world climate conference in Kyoto last year, it became clear that the differences had become too great to allow continued membership" (Cowe 1998).

When talking in more detail about Shell's decision to leave the Global Climate Coalition Mark Moody-Stuart said that, in contrast to BP, the company had initially:

> "stayed in the Climate Coalition on the ground that if you don't agree with people, you shouldn't withdraw, you should try and make them change their mind [but when] you come

down to a single issue body on climate alone then we did
conclude that since we couldn't persuade them to change
their mind that we should withdraw" (Moody-Stuart 2006).

This explanation seems a little incongruous as Shell headquarters had been publicly backing the Kyoto protocol and reductions in greenhouse gas emissions for many years. The Global Climate Coalition however was always a single issue organisation whose sole purpose from its conception was to argue against enforced reductions in these emissions.

Levy and Kolk's (2002) discussion of the contrasting positions of Shell in Europe and the United Stated is more revealing about the reasons for the organisation's withdrawal from the Global Climate Coalition. Levy and Kolk said that it was clear that Shell headquarters in Europe had for some time been moving "toward acceptance of the need for internationally agreed greenhouse gas emission controls" while Shell in the United States was still supporting the Global Climate Coalition, and taking a sceptical position over the need for controls (Levy & Kolk 2002 p277). This inconsistency became increasingly difficult to justify and having been publicised by environmental NGOs, to Shell's embarrassment, led to the U.S division of Shell being forced by the European headquarters to adopt the overall company position (Levy & Kolk 2002 p277).

This difference in national outlook and a consequential difference in the company's position in the United States is evidence of the autonomy of national operations, and their independence from the central management. While it can be argued that local autonomy allows the organisation to adapt to local operating conditions, it can lead to situations where the organisation as a whole is accused of having double standards. As with the Brent Spar incident, this was a case where Shell headquarters had overruled one of the national divisions over an issue that was attracting negative publicity for the organisation as a whole.

In discussing the contrast between the approaches of Shell and Exxon, Mark Moody-Stuart said:

"I talked to Lee Raymond [Chief Executive of Exxon] quite a
lot [...], and he said that [he] considered that there were
uncertainties. I think also that they [Exxon] had a position
that pre-investing for something that was going to happen a

long way down the line didn't make economic sense, you'd be better to save your investment and invest it later. This was very strongly their point on renewable energy, they said we don't think you can make money out of renewable energy, and if you can't make money out of it, it's not going to work, which is right" (Moody-Stuart 2006).

He then went on:

"You have a spectrum of reactions, from companies who say lets pour money into [renewables], in the hope that it will become commercial, well if you do too much of that you go bankrupt, and you have companies on the other wing who were not going to do anything until its really demonstrably commercial, if you do that you may be too late, because you won't have a market position, and in the middle you have companies trying to position themselves to do enough to learn about it [...] and to judge the moment at which to go into it in a big way, [...] I think Exxon are just at one end of that [spectrum], it's my belief that they'll shift back" (Moody-Stuart 2006)

When asked if he thought that in reality there was less of a difference in the positions of Exxon and Shell than the public might think, he said:

"there's certainly a very big difference in the public expression [of the companies positions] in my opinion you could have taken Exxon's actual position, in terms of energy efficiency, I think, and expressed it in a different way which wasn't quite so apparently confrontational, and had a very different public perception, but that's a personal opinion, and who am I to tell them how to run what is manifestly a very successful company financially" (Moody-Stuart 2006)

Although he never said it explicitly one got the distinct feeling that Mark Moody-Stuart thought that the significant difference between Shell and Exxon was the way they publicly expressed their position, rather than there being such fundamental differences in their positions. As in the earlier quote he felt that they were simply on different points of a spectrum of whether to start investing in renewable energy sooner rather than later. They had different points of view on when was the most advantageous time, commercially speaking, to start investing in renewable energy. Mark Moody-Stuart certainly seemed to have a degree of respect for Exxon's management and its financial results.

Scenario report (The new game & People power)

In 1998 Shell produced a scenario report, with two alternative scenarios entitled 'The new game' and 'People power'. The report states that at this point in time there is a continuing emphasis on globalisation, liberalisation and ever advancing technology. People were generally becoming wealthier and better educated. This increased individuals' choices, and there is also a greater willingness by individuals to pay for 'green' or ethical products (Shell 1998#3).

The first scenario, entitled 'The new game', envisaged people increasingly coming together to solve problems, there would be an emphasis on knowledge and transparency, and an ever increasing complexity in systems and institutions. There would be an increase in rules and regulation based systems. Global structures and institutions would become increasingly powerful and effective at addressing issues. Markets would change increasingly rapidly, meaning that companies had to be flexible, responsive and able to reinvent themselves to be successful. The Kyoto treaty would work successfully and there would generally be an increased consensus about the importance of environmental issues. This scenario suggested a reduction in the use of coal because of its high carbon content, improvements in energy efficiency through technological gains, and the formation of a 'World Environment Organisation' (Shell 1998#3).

The second scenario entitled 'People power' proposed that an increasing number of people around the world would be free to express their values spontaneously; diversity would replace authority and conformity, and long standing institutions would become weaker. As a result there would be increased volatility and unpredictability, and consumers would become increasingly individualistic and demanding. Change would be driven by crises as existing institutions struggled to cope with increasingly difficult problems. Individuals would be more likely to support global causes, rather than national policies which would be seen to be for the of benefit particular interests. More intense media scrutiny would lead to increased public accountability over social and environmental issues. There would be an emergence of more extreme activists using violence against perceived offenders, including oil companies and drivers of large cars (Shell 1998#3).

The 1998 scenarios are generally positive towards Kyoto and taking action over climate change. On the whole they suggested that market based solutions rather than regulations may be the best way to implement change. There is a suggestion that policy may start to be driven by crises, rather than implemented in a planed pro-active manner. The 1998 scenarios' suggestion that environmental activism would become more extreme as individuals felt more disempowered in tackling perceived threats seems to reflect Shell's experience over Brent Spar and Nigeria. It was suggested that people would take more interest in environmental issues as they become wealthier, but it was acknowledged that awareness of issues doesn't necessarily lead to positive action. It however failed to acknowledge that although people may become more environmentally aware as they become wealthier, they also tend to consume more, which may lead to increased energy demand.

In some ways this pair of scenarios seems to be as much a reaction to Shell's experiences over the previous three years rather than a visionary exploration of potential futures.

Shell employs communications consultants.

On the 30th June 1998 Shell put out a press release stating that it "has employed communications consultants [...] to undertake a wide ranging review of how Shell talks to its various stakeholders around the world [...] a proposed budget of up to $30 million has been put forward for the first year. A spokesman for Shell said: These appointments are part of the transformation process the Group has been undergoing for the last three years. That process has involved recognising that there had to be a change in the way Shell communicated, both internally and externally. Such a change is now under way and has resulted in greater openness and transparency. Today's announcement marks the next stage. By undertaking this review we hope to develop and then implement initiatives which will further improve the way we communicate" (Shell 1998#2).

This shows that Shell felt that it still needed to learn lessons, was taking communications with stakeholders seriously and was keen to be seen to be doing so. It is interesting that it proposed a budget of $30 million for the first year; this is

an indication of how seriously they took the problem. It also makes an interesting comparison with the investment in renewables that was announced the previous year. That amounted to $500 million over 5 years, equivalent to $100 million per year. The amount Shell was proposing to spend on communications consultants was nearly one third the amount it was spending on renewable energy.

Sir Mark Moody Stewart becomes head of Shell

On the 7th July 1998 Mark Moody Stewart moved from his position as head of Shell UK to replace Cor Herkstroter as Chair of Committee of Directors.

There seems to be a general agreement that Mark Moody Stewart played a significant part in further developing Shell's policy towards climate change, and continued moving the company away from the accepted industry norms of the time. A newspaper interview carried out by Macalister indicated that Mark Moody-Stuart had, for personal reasons, a particular awareness of ethical and sustainability issues. He "insists his own personal awakening on corporate responsibility and the wider promises and threats of globalization came early on, perhaps as a result of close contact with impoverished economies, or perhaps through the influence of religion" (Macalister 2003).

Lord Oxburgh also said that the first chief executive at Shell to take the issue of climate change seriously:

> "was Sir Mark Moody-Stuart, who basically said, yes this is important, and we are going to disassociate ourselves, as an organisation, from those companies that think otherwise, and I think the company has continued on from there" (Oxburgh 2006).

Although Lord Oxburgh credited Mark Moody-Stuart with decisively moving Shell forward on the issue of climate change, Moody-Stuart became the chair of the board of directors after Kyoto, and well after Shell's position on climate change had been formed. It is however clear that he was supportive of that position and helped move the organisation forward.

David Hone also thought that Shell's position had to a large extent been determined by the beliefs of recent heads of the company:

> "Both the current CEO [Jeroen van der Veer] and the
> previous chairman [Philip Watts], and the one before that
> [Mark Moody-Stuart], very much so, so it's very much been
> led from the top, and certainly very much so with our current
> CEO" (Hone 2006).

Lord Oxburgh also thought that Exxon's anti climate change position was largely influenced by the attitudes of a key individual:

> "I think it was Lee Raymond [Exxon's former chief executive]
> who was very influential while he was there" (Oxburgh 2006).

It is clear that there is a perception that strong leaders can play a significant part in determining the organisation's position, but there are of course other factors such as national differenecs and external events that also play their part.

Mark Moody-Stuart recalled that in addition to scenario planning, Shell had a formalised way of looking for specific new threats to the organisation or its business. This would have covered a wide range of issues that could impact on the company, and would certainly have picked up the potential impacts of climate change and consequent government policies on Shell's business:

> originally "we had an equivalent of a group research person,
> who would scan things like that, who would then ring bells
> and say 'look there does seem to be something brewing out
> there'" (Moody-Stuart 2006)

David Hone, a senior climate change advisor to Shell, was more specific about the way in which the issue of climate change was tackled by strategic planners within Shell:

> "it started about '98 with a cross business [...] team to have a
> look at it, and they came up with a number of
> recommendations which initially kept the [issue] in the
> corporate centre, but subsequently has expanded right
> across all our businesses, there was a cross business team
> that initially looked at the issues so it wasn't just one person
> in the corporate centre or anything like that" (Hone 2006).

It is notable that although Shell had been making positive public statements about climate change policy for many years, this cross business team was only set up in 1998. It would appear to be more of a reaction to Kyoto, rather than a proactive attempt to pre-empt what may have resulted from Kyoto.

As well as this cross business team Hone said that the scenario planning team had also:

> "played part of the role. There are a number of elements to it, but [scenario planning] is an important part as well. You know having a view of the future and a view of how things might progress is an important part in determining if something's an issue for your company, and how big an issue it might be" (Hone 2006).

When asked if there had been much internal opposition to the position Shell took on climate change, Hone said:

> No, I mean there has been opposition from time to time, but I think generally not" (Hone 2006).

Roger Booth made the point that the climate change issue would have still taken some time to work its way through the whole organisation even after the top management became aware of its importance:

> "when you've got something like 100,000 people in [...] 150, 200 countries in the world it's difficult for anyone to say what the current ethos [on climate change] is, I would say [that there were] people within the Shell Centre, and probably the Hague office as well, who were at least sympathetic, and some were quite vociferous in saying this is a big, big issue" (Booth 2006).

It is clear that although there may have been general agreement and little internal opposition to the organisation's position on climate change, it would have taken some time for the significance of the issue to be spread through the organisation, and become an integral part of the organisation's operation.

Organisational culture in Shell

Mark Moody-Stuart spoke enthusiastically about a culture of openness within Shell, and the way free speech was encouraged:

> "I do think the atmosphere within a company makes a big difference, whether people are welcome to express opinions, whether there is [...] intellectual discussion about things [...] whether the corporate ethos allows you to say, hey I don't agree with something or [...] that doesn't seem right to me, and one of the things I was always extremely proud of in Shell, and the only reason I stayed working for them for so long was in my whole career, if ever you said 'well that doesn't actually seem quite right to me', people wouldn't say 'well what's that got to do with it' but they'd say well why? Why doesn't it?" (Moody-Stuart 2006)

Moody-Stuart later reinforced this with the following comment:

> "in Shell generally we actually encouraged people to say what they thought, and to discuss things, [...] we used to run annual employees surveys, and one of my great prides, was that our score for the question, 'in this company I can say what I think' was very high, you have industry norms and this was well above the industry norm" (Moody-Stuart 2006)

Lord Oxburgh made the same point. When asked about whether there was open discussion within Shell about climate change and Kyoto, he said yes:

> "Shell is that sort of organisation, all the people talk about it" (Oxburgh 2006)

He also positively agreed with the statement that Shell is open to individuals within the organisation making comments and questioning positions, that it has an open organisational culture.

When asked about the apparent differences between Shell and Exxon, Roger Booth spoke about both the organisational structure and culture.

> "I would suspect that one of the differences is in how the various companies were managed. [...] The whole upper management [of Shell] was run by a committee of managing directors [...] who came from different backgrounds, and there was a chairman of the committee of managing directors, but he was, [called], something like equal among equals, so although he was the chairman all the others had a strong say, so it had [...]a pretty democratic style of management, probably consensus is a good word for it,

whereas the American companies were, and still tend to be, run by a very powerful CEO, what's his name at Exxon, Raymond [he is] a very powerful man [...] if you disagreed you may as well go looking for a job somewhere else, whereas Shell I think always had had, and I hope still does, have the policy of listening to dissent if you like, and being more open to looking at different views" (Booth 2006).

Because of this it is likely that new issues are more likely to be accepted as significant, rather than rejected simply because a key individual doesn't agree. It also means change is more likely to happen by a gradual process of acceptance rather than a step change when a key individual accepts or rejects a new idea.

Mark Moody-Stuart again said very similar things when comparing Shell's management ethos with Exxon's:

> "I mean I think their [Exxon's] Achilles heal is hierarchy. [...] I mean we did a lot of work in partnership with [them] and someone in Exxon did a very good analysis of the major differences [between Shell and Exxon], he said, in Exxon no public statement is made without it being cleared at the centre, that was certainly not so in Shell, local operating companies were free within a broad framework to make statements in their own language [...], secondly the interaction with governments in Shell was always done by the local company, so if I, from the centre, went to visit a country, I went to visit our operations in that country, and said [...] if it is helpful to you in your relationship with the government, I am happy to see your president or prime minister, [...] but you decide whether it's useful or not, and if we do, you tell me what the issues are for you in this country, so I'm properly briefed on it, [...] the Exxon approach was when they want to interact with the country, they flew someone from the centre, so I think there are issues in how the strategy, it is put across and perceived, and Lord knows we had enough difficulty with that in Shell, I'm not suggesting that Shell's methods were in any way perfect (Moody-Stuart 2006)

The independence of Shell's national companies was graphically demonstrated during the Brent Spar crisis. Shell UK decided on a course of action which caused repercussions in other European countries and led to a public dispute between different Shell divisions that eventually required an intervention by the Head Office.

Despite the differences between Shell and Exxon, Moody-Stuart seemed to have considerable respect for Exxon:

> "in my humble opinion Exxon is an extremely effective organisation, they are very, very good executers if you want a partner in a project to do something and get on and do it they're as good a company as any, if you look at their performance when they set out to do something it's excellent" (Moody-Stuart 2006)

The more open consensus approach at Shell may be better for picking up important new issues, resulting in them being taken more seriously than at Exxon, but Exxon's more hierarchical power structure may lead to decisions being implemented more quickly and decisively.

Making changes at Shell

Mark Moody-Stuart spoke about the realities of making changes in a large multinational organisation. He talked about the inertia that would be encountered, and the need to have key people in position who understand and can help implement the changes:

> "in any large organisation, [...] what you need [to implement changes] is a collection of people around the organisation, at all levels, not just at the top, people who are influential in their [area], who understand what you're on about [...] if you have maybe a hundred people round the world who know what you're on about, trust you, understand where you're going, so when you say 'we're off there', even if you express it in a way which locally is not particularly understood, and people locally say 'what the hell's he going on about' there's somebody there who can say 'now wait a bit, what he actually means is this and this', who can react locally to whatever the central thing is, and that's the whole fun of international business" (Moody-Stuart 2006)

On a personal level, Mark Moody-Stuart emphasised the importance of senior executives' leadership styles. He talks about the importance of consensus building and involving people in decision making, rather than imposing decisions from above:

> "the mistake people make is they assume that people at the top of the organisation can pound the table and say 'right that's it, do it' that doesn't work, I mean around the world,

with many countries, before you do that you have to make sure that people think it's sensible, because if they don't think it's sensible they just won't do it, they'll be late and they'll postpone it and they'll say sorry they've got other things going on, and there'll be all sorts of obstructions. A lot of what you do is actually by your personal leadership, by the way you approach things, the way you talk to people" (Moody-Stuart 2006)

Richard Booth goes on to talk about the financial realities of turning a large oil and gas company around into a significant producer of renewable energy:

"There is no way a company like Shell or BP could switch from fossils to renewables and keep that level of profit generation or cash flow, they can't do it overnight, they can't even do it in a year, it's a matter of decades" (Booth 2006).

And then:

"[until renewables are] starting to generate a few billion dollars a year into the corporate cash flow, it will still be small, and the same is true for BP, BP solar, yes it's big in terms of the solar industry, but in terms of BP's cash flow it's bugger all" (Booth 2006).

Lord Oxburgh made the same point about inertia. First that it takes a long time to make changes in an organisation as large as Shell, and second that as a society we are so dependent on fossil fuels that it will take decades to change over to other energy sources. It is interesting that he also comments about the lack of research into renewable energy:

"I think that Shell is investing about as fast as it can at the moment actually, I mean fundamentally the whole renewables area is under researched, world wide and particularly in the UK where almost no government research money has gone into energy for about 20, 25 years" (Oxburgh 2006).

And then talking about the global picture, Lord Oxburgh said:

"even with the best will in the world, even changing as fast as we possibly could, we'd still be using oil 40 years from now, and that's a pretty long horizon, that said I think most people would agree that on that time scale we actually have to tackle climate change in a big way" (Oxburgh 2006).

David Hone makes the same point, that ultimately however fossil fuels will remain the main part of Shell's business for at least another four or five decades:

"more likely towards the middle of the [21st] century, but
there's a clear desire that at least one of the alternative
energy businesses we have, we've started developing,
becomes a large scale main stream business" (Hone 2006).

Even taking into account the time scales involved, Roger Booth felt that there was
a genuine commitment towards tacking climate change, particularly among
technical staff within Shell:

"I know the ones I worked with, they were pretty committed to
that fact that we've got to do something, and this is a way we
can go, renewables can meet all our demands, but it'll take
100 years before we get there" (Booth 206)

Greg Muttit (2004), a researcher who has followed Shell for many years said that
"there are certainly people in Shell who very much believe that reform of the
organisation is possible, that it's possible for Shell to work in a more ethical
manner, and there are people in Shell who work hard to try to make that happen",
but he went on to say that "most of those people are not at the core of business
decisions. They almost exist as a bolt on, they're a department in there own right.
Part of the problem is the people who are good in those sorts or roles don't tend to
make good business managers" (Muttit 2004).

This seems to corroborate the previous quote from Roger Booth, that there are
people within Shell who are genuinely committed to tackling climate change and
moving the company towards being a genuinely sustainable energy producer.
They tend however not to be in positions where they can make key business
decisions.

In September 1998 Jeroen van der Veer, then head of the Dutch division of Shell,
gave a speech at an International Energy Agency Conference in Switzerland
entitled 'The Greenhouse Challenge'.

He started by saying that although there is still uncertainty over climate change,
and more research is required, precautionary action should be taken. He thought
that it would be a challenge for governments to meet the Kyoto targets, but that

industry could help by participating "in the dialogue on policy decisions" that they "would benefit from a wide range of informed input as they seek to provide the right framework, one which stimulates the efficient delivery of cost-effective solutions" (van der Veer 1998).

Van der Veer first made the point that it is governments which have the responsibility for meeting the Kyoto targets, but it is clear that although the language may be guarded, Shell wanted to be part of the debate on government policy making: that they wanted to have some say in any regulations that may be imposed on them. Van der Veer believed that governments' role was to "provide clarity and direction" and to allow "market driven private enterprise" to provide the most cost effective technical solutions.

Van der Veer again said that Shell's managers had learned that they must "listen to the messages that society gives us" and that they can no longer expect people to simply trust them to take the best course of action. They understood that they now have to demonstrate that they are acting responsibly and allow people to make up their own minds (van der Veer 1998).

He said that one of the messages Shell was receiving from the public is "that while we must do the best and cleanest job we can in providing the fossil fuel energy that is essential to meet the world's growing energy needs, we must also focus on developing new technologies and new energy forms for the longer term future" (van der Veer 1998). Although he said that this is a message that Shell was receiving from society, it sounds very much like a piece of Shell's own rhetoric.

The final point van der Veer made is that he believes effective solutions to climate change must be commercially viable, "good business propositions" (van der Veer 1998). He says that the issue is "so huge that it cannot be solved by subsidies" that "the way ahead for renewables is through private enterprise, working to provide solutions on a commercial basis" (van der Veer 1998). While this is a valid point of view, it can also be seen as a defence of Shell's continuing legitimacy as a profit making enterprise. Again the emphasis is on technological solutions, something that would suite Shell's area of expertise and provide it with business opportunities.

Shell sets targets for carbon dioxide reductions

Mark Moody-Stuart said that when he began to understand the potential impact of carbon dioxide emissions into the atmosphere, it was something that really worried him because:

> "for the first time, with carbon dioxide, we got into a situation where the actual product which the people [used], was linked to something potentially causing global damage" (Moody-Stuart 2006).

He then went on to say that unlike other environmental issues, such as lead in petrol or particulate emissions, the impacts were on the planet as a whole, and there were no simple technical solutions. Having admitted that there was a fundamental problem with the product, he said Shell's first practical reaction was to commit the company to a reduction in greenhouse gas emissions from its own operations.

On the 16th October 1998 Shell announced that it would "cut the emissions of greenhouse gas emissions from its global operations by more than 10 percent by 2002, compared with 1990 levels, [and aim] to exceed the Kyoto emissions reduction targets through the decade to 2010" (Shell 1998).

This pledge came around a month after BP made a similar commitment to reduce its greenhouse gas emissions "by 10 percent from 1990 levels – a target higher than that of most governments" (Leggett 2000 p329). It would appear that again Shell followed BP's example in making a significant announcement about an environmental policy.

While reducing emissions from the company's operations was clearly a positive move, it did not address the more fundamental problem of the greenhouse gas emissions from the use of the fossil fuels produced by the company. However as Roger Booth acknowledges, oil companies are in a difficult position when it comes to improving their environmental performance with regard to greenhouse gas emissions:

> "I know both BP and Shell very early on signed up to say that they would reduce their own emissions of carbon dioxide in excess of the Kyoto requirements, now you can argue, if you

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wish to be cynical, that that was a bit of a cynical approach
because both companies are increasing their [...] production
of oil and gas. Now both have sold off coal operations, so
you can argue that point, but to me if you're trying to increase
the amount that your customers emit, it's a bit disingenuous
to say we're reducing what we emit in providing it, but equally
well if the demand for energy on a global basis is going up it's
the role of an energy company to meet that, it's a very
complex and difficult decision" (Booth 2006)

In February 1999 Mark Moody-Stuart made a speech to the World Economic
Forum in Davos about the contribution of new technology to tackling
environmental issues. He first emphasised the importance of energy supply to
economic development.   Again he quoted the three pillars of sustainable
development as economic, social and environmental development. He said that
new technology would be the key to allowing economic development to continue
without damaging the global environment (Moody-Stuart 1999).

He said he believed Shell's role "is to be the efficient, responsible and acceptable
provider of the energy the world needs to underpin economic, environmental and
social development" (Moody-Stuart 1999).   The use of the term 'acceptable'
indicates a desire for legitimacy, and this quote implies that energy supply is
necessary for environmental development, which is questionable.

He said that Shell would help to tackle climate change by improving the efficiency
of its own production processes and by promoting natural gas as a low carbon
fuel. He also said that there was a great potential for developing new technology
to improve efficiency, particularly in the transport sector, and that Shell was
investigating ways of capturing carbon dioxide and storing or using it. He also
emphasised the need for partnerships and cooperation with a range of
stakeholders again appearing to move responsibility away from Shell alone.

Mark Moody-Stuart saw renewable energy as an important development in the
long term. He said that Shell was making substantial investments in renewable
energy, including solar, wind and particularly biomass, saying that Shell's technical

knowledge will help them to develop more efficient technologies (Moody-Stuart 1999).

He said that he thought that private enterprise was in the best position to develop new technologies that would be environmentally sustainable, while being commercially viable, therefore satisfying customers and maintaining economic development (Moody-Stuart 1999).

It is clear that from the early speeches in 1996 there is a constant acknowledgement that prudent precautionary action should be taken, even though there was still uncertainty about climate change. Another strong theme that runs through all these speeches is the need for continued economic development, to fight poverty and deprivation. The Brundtland definition of sustainable development is quoted regularly, emphasising the need to balance environmental sustainability with economic and social development. The availability of affordable energy is cited as an important factor in economic development, and hence helping to lift people out of poverty. This is used both as a legitimisation of the energy industry and also as a defence against restricting energy use in order to combat climate change.

Many of the speeches also claim that as there are no viable large scale alternatives to fossil fuels, oil and gas will inevitably be a significant source of energy supply for the foreseeable future. Shell appears to be arguing that precautionary action should be taken to combat climate change, and then suggests that significant changes can't be made, at least in the short term.

Shell also says that it will do what it can to combat climate change, but that it is only a relatively small contributor to climate change, and is at the mercy of powerful market forces so it can't make a big difference on its own. Shell seems to want to give the impression that although it is keen to play its part, it lacks agency and doesn't have the power, to make a significant difference on its own. While there may be some truth in this, it does not acknowledge the hugely symbolic impact of its actions.

Individuals at Shell give the impression that the organisation wants to be seen by the public 'doing the right thing' but doesn't want to take significant risks or attempt to lead the way or positively influence the public policy agenda. There is an emphasis on technical solutions, focusing on Shell's existing knowledge and key competencies, as the alternative of reducing energy consumption and hence sales of fossil fuels would clearly compromise their business.

There seems to have been an increase in the number of speeches on sustainability in the months immediately before and after Kyoto, showing that Shell was well aware of the impact and implications of the protocol, and wanted to be seen to be publicly supporting it.

The end of the Global Climate Coalition

In 2000 the Global Climate Coalition was restructured and membership was restricted to trade associations, to reduce the negative publicity incurred by individual companies who were members. The Coalition was finally wound up in 2002 "explaining that it 'has served its purpose by contributing to a new national approach to global warming. The Bush administration will soon announce a climate policy that is expected to rely on the development of new technologies to reduce greenhouse emissions, a concept strongly supported by the GCC'" (Sourcewatch 2006).

4.4 Reflections

Roger Booth felt that one of the main reasons why Shell was among the first oil companies to acknowledge climate change was its management structure, and the unusual nature of the business as a long standing partnership between two companies.

In contrast Mark Moody-Stuart felt that the structure of the organisation as a whole didn't have a significant effect on the way the company operated:

> "I mean Shell's dual headed structure didn't have any impact on the vast majority of the people in the organisation" (Moody-Stuart 2006).

Being at the very top of the organisation Mark Moody-Stuart would have had a different perspective to Roger Booth, and may have been in a better position to see the influence of the organisation's structure. He does however go on to stress the importance of the organisational culture that was characteristic of Shell.

When Lord Oxburgh was asked why he thought Shell had been more proactive, earlier on, with regard to climate change, he said:

> "I suspect because in some ways [Shell] has a fairly strong science base, which perhaps not all companies have, it's strong in science as well as its engineering and fundamentally a lot of the arguments about climate change start with science" (Oxburgh 2006).

This is interesting because the former head of Exxon, Lee Raymond, who was so publicly opposed to taking action to tackle climate change, has a PhD in chemical engineering, (Behnke 2006) so one would have thought he would have had a strong science base.

When the question of why Shell was among the first major oil companies to acknowledge the importance of climate change was put to Mark Moody-Stuart, he said:

> "I think because we saw it as a serious threat, not just to our business but to the production of energy which is our business, [...] and if you have an apparently newly discovered

detrimental side effect [...] then that's very worrying, and
there's no good sitting down and arguing that it's not going to
happen, that's pointless" (Moody-Stuart 2006).

He said that climate change was important to the way Shell made decisions about
future investments because:

> "here were serious scientists saying that there were risks.
> And those were the sort of risks on which we make major
> investments" (Moody-Stuart 2006).

This would appear to be the bottom line: that Shell management thought that
climate change would have an impact that would significantly influence their
business. It therefore made more sense to acknowledge the issue and work with
it rather than try to deny it. David Hone made the same point, that in Shell there
was a:

> "clear recognition that it's a business issue, its an issue that's
> not going to go away, that needs to be addressed in the
> medium future, and therefore is going to have an impact on
> our business one way or the other, and that it's probably
> easier to be part of that discussion in a proactive way, which
> helps you lead the discussion, maybe influence it as a win –
> win, rather than just be an antagonist the whole time" (Hone
> 2006).

Roger Booth spoke in similar terms about how Shell could have responded to the
IPCC's first report in 1990. At the time people were saying:

> "we've got two lines with this, we can either say its not our
> problem, or we can say it is our problem and that we should
> really be part of a solution" (Booth 2006).

Mark Moody-Stuart made the same point:

> "that was why I think we took it so seriously, and wanted to
> say, look this is an issue, we shouldn't dodge the issue,
> we've always said we shouldn't dodge the issue, you should
> be absolutely up front about it and we should say, this is a
> matter of concern, now what can we do about it without
> screwing up the worlds economy" (Moody-Stuart 2006)

Roger Booth said that individuals in Shell felt that they were in a good position to
help find solutions to the problem:

"because if you take a multi-national oil company you've probably got [...] one of the widest knowledge and skill based groups that you would find anywhere" (Booth 2006).

This implies that he felt that Shell, and possibly the wider industry should be taking the lead in addressing climate change: that because they had such a reserve of skills and knowledge they were well placed to devise technical solutions to the problem.

Interestingly, although Shell has been widely seen as a leader in sustainability in the oil industry, when Mark Moody-Stuart was asked whether Shell felt that it should be a leader in developing sustainable energy, he said:

"No I don't think so, we just felt that we should be in a position where we could understand what the technologies were and time the investment correctly, and that's the art of business basically" (Moody-Stuart 2006)

This seems to sum up the fact that whatever Shell may have said about taking climate change seriously, when it came to making an investment in sustainable energy supplies it was basically a business decision.

When talking about how Shell's position will develop, in relation to the broader policy debate David Hone said:

"I think [it will be] much more linked to the external environment [...and], government policy, you know we started dealing with this issue pretty much in a vacuum and that vacuum's rapidly being filled, and I don't think you would deal with it in a way that bucked that trend because then you'd end up with an a approach that wasn't in line with the reality of the external world, so I think in the future its going to be much more oriented around the policy world that exists, but with a desire to influence that policy world so that the way in which it is structured works for us as well as working for the environment" (Hone 2006).

When asked if there were any differences of opinion on this among the senior management, Hone said"

"I think the management are very aligned on the need to address this issue" (Hone 2006).

4.5 Summary

It is clear that certain senior individuals in Shell were aware of climate change, as a concept, as early as the Club of Rome report in the early 1970s. There may have been some development of that awareness through the 1980s, but it appears that it wasn't generally seen as something that the energy industry may have to address until the early 1990s. According to Booth (2006) climate change was first seriously discussed within Shell in the early 1990s, when people in the group planning department started to become more aware of the issue.

The Rio Earth Summit in 1992 was a turning point; it was the first major global environmental conference involving governments, environmental pressure groups and other interested parties. Again Booth said there was a senior Shell presence at the Rio Summit, although Mark Moody-Stuart (2006) was unable to confirm this. It is however hard to believe that senior Shell management would not have been, at the very least, aware of what was happening in Rio. It is therefore pretty certain that the most senior Shell management were at least aware of climate change by this time. Whether or not they thought it was a serious man made problem that the organisation would need to address is however another issue.

By 1995 the scenario reports included climate change as an issue of potential concern for the organisation. Shell Renewables was set up as an independent division in 1997 and by the end of the year an investment of $500 million over five years had been announced.

Shell was a member of the Global Climate Coalition from its foundation in 1989. It continued with its membership, despite public statements by senior managers through the mid 1990s acknowledging the need to address climate change. In the late 1990s, and particularly in the run up to Kyoto, Shell increasingly found itself the subject of criticism for this apparent hypocrisy. Shell formally withdrew from the Global Climate Coalition in early 1998, a few months after Kyoto.

Once the evidence for climate change became stronger, Shell, as an organisation, appears to have accepted it quite easily. The scientific evidence was generally accepted, and discussion of the issue was in no way suppressed. Shell seems to

be an organisation that accepts and even encourages openness and free thinking among its employees.

Mark Moody Stewart is generally credited with being an outspoken advocate of the need for action to control greenhouse gas emissions. He however became head of Shell the year after Kyoto and it is clear that the foundations for Shell's position were being put in place over the previous decade. There were no apparent changes in Shell's position that could be directly attributed to the actions of any one individual.

It is clear that an important factor was the significant differences in public discourse and government policy between the United States and European countries. The Netherlands in particular, from where Shell appeared to derive a significant degree of influence, was regarded as having some of the most progressive attitudes and policies towards environmental issues. It is also clear that Shell's experiences with the Brent Spar and in Nigeria had a profound influence of the organisation. They appeared to have shaped its thinking when dealing with subsequent issues that had the potential to cause a negative public reaction.

It has to be recognised however, that despite the positive statements about supporting the Kyoto protocol and taking action to reduce greenhouse gas emissions, Shell will continue to be a major producer of fossil fuels for many decades to come. It will therefore continue to be a major contributor to climate change. This is simply because there is a growing global demand for energy, and the alternatives to fossil fuels are still in no position to meet this demand. Shell is a large organisation with a great deal of inertia, and as long as there are profits to be made in oil and gas Shell will continue to maintain its production of these fuels.

Chapter 5

Discussion

This chapter is a discussion of the findings of the case study. It considers these findings in relation to the literature reviewed in chapter two.

The first section of this chapter summarises Shell's position on climate change, based on evidence gathered in the case study. The following sections take the main areas of the literature reviewed in chapter 2 and assess the contribution they make to explain the position Shell took.

This chapter concludes with a discussion of the relative importance of the contributing factors that led Shell to take the position it did. It considers the contribution that path dependency theory can make to explain the course that Shell took.

5.1 Summary of Shell's position

It is clear that Shell was willing to publicly acknowledge the significance of climate change much earlier than the majority of the major oil companies. Statements by a number of senior individuals at Shell also indicated that they recognised that the oil industry was a major contributor to the problem and should therefore endeavour to be part of the solution. Shell was, by implication, rejecting the position taken by much of the rest of the industry, that climate change either wasn't a problem, or that the industry should not feel obliged to take action.

In the early and mid 1990s senior managers at Shell repeatedly called for precautionary action to be taken even while there was still some uncertainty over the science of climate change. They agreed with the prevailing scientific opinion that the potential risks of climate change were too great to ignore, even while there may have still been some doubt about the contribution made by the burning of fossil fuels.

Most of the speeches by senior managers, when supporting the need for action on climate change, quote the three pillars of sustainability, derived from the Brundtland report. While acknowledging the importance of environmental issues they also stress the need for continued economic growth and social development. Individuals at Shell cited the fact that the organisation is a major employer, pays large tax revenues and is contributing to third world development, in order to reinforce the organisation's legitimacy. The implicit suggestion is that although the company would like to do more to improve its environmental performance, it could only do this by reducing its contribution to economic and social development which would be unacceptable. The outcomes of the Brundtland report, intended as a framework for improving the overall sustainability of human development appears to be being implicitly used to justify not taking stronger environmental action.

When discussing action to combat climate change, individuals from Shell concentrate on technical solutions, emphasising the organisation's scientific and engineering expertise. While there is occasional mention of improving energy efficiency there is perhaps unsurprisingly virtually no discussion of the possibility of reducing the consumption of fossil fuels, arguably the most effective way of

combating climate change. While stating the need for coherent government direction, Shell managers also emphasise that solutions must be financially viable, and that market forces are the most effective way to direct resources into renewable energy. This appears to be both a desire by Shell to be seen to be part of the solution, and also a warning to governments not to penalise multinational industries for being perceived as being part of the problem.

Shell has used its decision to invest in renewable energy as evidence that it is committed to taking action against climate change. At the time in question renewable energy had generally been less profitable than fossil fuels. Decisions to investments in renewable energy by oil companies such as Shell were therefore not purely determined by the returns they could achieve. Having said this, an investment in renewable energy isn't in itself necessarily evidence of an altruistic commitment to tackling climate change; it may simply be a case of entering a market that is perceived as having the potential to be profitable in the future.

Shell's renewable energy business has been more focused on profiting from available technology than speculative development of new technology, and although Shell's investment in renewable energy is significant in the context of the renewable energy market, it is still tiny in comparison to its continuing investment in oil and gas exploration. Despite the rhetoric, but perhaps unsurprisingly, it has become increasingly clear as time has passed that the primary driving force behind Shell's investment decisions has been their perceived potential to be profitable.

Investment in renewable energy will continue to be a small part of Shell's overall investment for as long as fossil fuels are more profitable. When pressed, senior managers admit that fossil fuels will be the main focus of the company's business for many decades to come. As Skjærseth and Skodvin (2001) suggest, it appears to be true that "Shell's approach to climate change is more visible in its public profile than in its operations", however they go on to say "that this can nevertheless be read as a signal of what kind of future the company is preparing for" (Skjærseth & Skodvin 2001 p50).

5.2 Organisational Factors

5.2.1 Structure & culture

Current literature has come to a mixed set of conclusions over the links between organisational structure and strategic planning outcomes. The strongest links seem to be between the way information is gathered and processed and the way decisions are made, but authors such as Engdahl et al. (2000) acknowledge that even this may not be a determining factor in decision making outcomes and that there may be other more significant factors.

There is also a growing understanding that culture and structure are inextricably linked and by implication organisational culture may have the capacity to influence decision making processes.

The data shows that there are two significant aspects of Shell's management structure that set it apart from other major oil companies. First that the company was decentralised, with local operating centres having a greater degree of autonomy than in many oil companies. Second, that there was more equality of power among the managing directors, and that the chair of the board had less personal power than most chief executives of major oil companies.

There is also a general agreement that Shell has an organisational culture that is more open and accepting of questioning from within. There was no suggestion however that before the mid 1990s Shell was any more open to external influences than the industry norms.

Oechsle and Henderson (2000) and Frynas (2003) both argue that because of Shell's unique management structure and collective decision making process, decision making was very much consensus-driven, that decisions took longer to make, but were better thought out. There was also no one person who had the ability to decisively change the direction of the organisation. A range of individuals will bring in more diverse perspectives it may be the case that having more input and discussion from a wider group of individuals would mean that issues such as climate change would be addressed earlier at the top level.

As Shell is managed by a committee of directors there are less likely to be sudden changes in direction as individual members come and go. A change to the chair of the committee is much less likely to bring about sudden changes in policy than the arrival of a new chief executive might in other companies. This was evident as the replacement of Cor Herkstroter with Mark Moody-Stuart and later Patrick Watts did not lead to any significant change in the company's position on climate change.

There was evidence in some of the interview data, particularly from Roger Booth and Lord Oxburgh, that the fact that Shell had a committee of directors set it apart from the industry norms and led to distinctive strategies in some areas. There was however no indication that it had specifically impacted on the company's position on climate change.

On the subject of Shell's decentralised organisational structure Mark Moody-Stuart denied that it would have had any significant influence over the company's position on climate change. He said that he thought it would have had little impact on the majority of the people who worked at Shell. Shell's structure may have been unique among the large oil companies, but there was little evidence that it had a significant impact on the strategic decision making at Shell headquarters. Shell's structure seemed to have had more impact on policy implementation than policy formation. The relative independence of Shell's various national operations did mean that there was some difference in the public demonstration of Shell's support for action to combat climate change. This was particularly evident in the differences between Shell companies in Europe and the US, a difference that was to some extent influenced by differing public discourses and governmental policies.

The culture at Shell of internal openness, accepting suggestions and listening to dissent from staff was indicated by several data sources as something that set Shell apart from other oil companies. Mark Moody-Stuart in particular felt that Shell's organisational culture was a significant factor in the way that it was run, that internal openness and discussion promoted better strategic decision making. Roger Booth however, spoke of his frustrations that senior management weren't moving faster in investing in renewable energy, but there was little evidence that

Shell's overall position on climate change was being significantly influenced by bottom up pressures within the organisation. The data therefore did not suggest that organisational culture had any significant influence over the course of the company's position on climate change.

There is considerable discussion in the literature about the way strategy could influence the structure of an organisation. There was no evidence that Shell's strategy on climate change had influenced the structure of the organisation, which at the time in question was largely determined by historical factors. The formation of Shell Renewables in 1997 lead to the creation of an extra division, but it was within the established structure, and did not lead to significant changes to existing parts of the organisation.

5.2.2 Planning, decision making and the use of Scenarios

A prominent theme running through the current literature is that scenario planning is regarded as an important part of Shell's decision making process, especially for longer term strategic planning. Within Shell the use of scenarios is an important part of the organisational culture, contributing to the belief in the company's objective, scientific outlook. Several authors including Wright (2004) and Skjærseth and Skodvin (2001) concluded that in the past scenario planning had helped Shell to make critical decisions more effectively.

The data from several of the interviewees also indicated the significance of scenarios in helping the organisation to plan for the long term future and emphasised that they were a fully integrated part of the strategic planning process. As the scenarios are an integral part of the strategic planning process and widely distributed throughout the organisation, they are a subtle yet powerful way of influencing the way the organisation positions itself with respect to important issues. A senior manager in Shell stated that the organisation used scenarios to explore facts and develop a common language and framework with regard to the organisation's external environment and also to challenge the perceptions of decision makers (Leffler 1995).

This demonstrates that the collective narratives and outlooks of the organisation are constructed as a result of individuals' interpretation of the external environment, and indicates an implicit understanding that although 'facts' may be analysed, it is individuals perceptions that are important. It also implies that the scenario planner has the power to influence the perceptions of the decision maker. This puts the supposedly neutral scenario planner in a potentially powerful position, and also undermines the concept of an objective, scientific outlook.

The scenario reports tend to portray Shell itself as a passive actor that reacts to events rather than playing an active part in shaping them. The scenario planning methodologies that are used state that the "scenarios should never contain the organisation as an actor" (Wright 2004 p10). When the organisation is a major and influential player in the field this would seem to be denying a fundamental reality. From the scenarios alone one cannot however judge the extent to which Shell planners and managers discuss ways in which they could influence the course of events to make things more advantageous for the company.

Shell's scenarios have, in the past, suggested a future in which low-carbon and renewable energy sources may supply as much as up to 50% of world energy demands by 2050. Individuals at Shell have stated that this is the reason for its investment in renewable energy. The company sees this as a growing market that it intends to profit from in the future. It has also been used to suggest that market forces will lead to reductions in greenhouse gas emissions and that mandatory controls would not be necessary.

A more detailed analysis of the scenario reports however presents a rather different picture of the way in which environmental sustainability issues are handled. Much of what is in the scenarios seems to be more of a predicable extension of the ways in which events in preceding years may develop rather than an innovative exploration of potential future events. In the area of environmental sustainability there are also few apparent direct links between each scenario report and senior managers' statements of Shell's position at that time.

The 1992 scenarios discuss increasing demand for finite resources, in particular fossil fuels, and the need for global agreements. This wasn't particularly

innovative, given that the Brundtland report was discussing this in 1987 and that international agreements were being proposed in the run up to the United Nations summit in Rio in 1992. It is also striking that at this time senior mangers at Shell were not particularly vocal about the need for action on climate change, or proactive in discussing the management of its own environmental impacts.

The 1995 scenarios have curiously little specific discussion of environmental issues and especially climate change, especially considering that the IPCC was active and the process of negotiating a treaty to control greenhouse emissions was already well advanced. There was in fact less discussion of environmental issues than in the 1992 scenarios. It was however at about this time that senior managers at Shell started to make the public statements about supporting controls on greenhouse gas emissions. It would therefore appear that it wasn't the scenarios that were the primary influence on Shell's senior management on the topic of climate change.

The 1998 scenarios considered the way the Kyoto protocol might be implemented and how environmental policies may be driven by emerging crises and more extreme environmental activism rather than by planned proactive action by government and business. This would certainly have led Shell management to consider the potential impacts of the Kyoto treaty and resulting public reaction. This was however long after Shell's position on climate change had been determined, and there is no evidence that it caused any significant changes in Shell's position. Again this set of scenarios seems to be as much a reaction to previous years' events as a visionary exploration of potential futures.

Existing research and opinion within Shell, including some data collected for this thesis such as the interview with Lord Oxburgh, suggests that individuals think the use of scenario planning is a factor that has set the organisation apart from the rest of the industry. The use of scenario planning may have meant that Shell managers had a broader outlook in general and meant they were looking at factors that could have a more indirect influence on the long term future. The overall evidence from data collected for this research would however appear to show that the scenarios played little direct part in the development of Shell's

position on climate change, a position that set it apart from the industry norms at the time.

From a theoretical point of view the formal structure of Shell's strategic planning, including the scenario planning, and the information gathering and dissemination that accompanies it, would seem to be at odds with Cohen et al's Garbage Can Model of organisational decision making. This model suggests that individuals and information come together in a relatively chaotic way, with solutions waiting for problems to solve. In this instance this does not seem to have been the case at Shell.

5.2.3 Historical factors

A number of authors, such as Barney (1996), claim that the origins and early development of an organisation can influence its current strategies and courses of action.

There are elements of Shell's structure, culture and decision making processes that can certainly be traced back to its early history, but as discussed earlier in this section the data collected during this research didn't indicate that Shell's structure, culture or planning processes had a significant impact on Shell's position on climate change. They certainly did not appear to be decisive factors that set Shell apart from the industry norms in respect to climate change policy.

It was claimed by Levy and Kolk (2002) that Exxon was deterred from investing in renewable energy in the 1990s because it had lost a considerable amount of money, having invested in renewables in the 1970s and 80s. Levy and Kolk claimed that this was an experience that the European oil companies had not had, and therefore European companies such as Shell were not deterred from making such investments. As the European companies were more willing to make investments in renewable energy, they were therefore more willing to support action to tackle climate change. Action which could by implication threaten their core fossil fuel business. Shell did however have some very negative experiences attempting to diversify into coal and nuclear power in the 1980s. Lord Oxburgh (2006) discussed this in terms of Shell having learnt lessons from its previous

negative experiences and it does not seem to have deterred the company from diversifying into bio-fuels, photovoltaic and wind energy in the 1990s and early 2000s.

It would appear that Shell's earlier history, from before the period when climate change became an issue for public discussion, had little influence on the organisation's position on climate change when it became an issue for public discussion. Shell did however experience two more recent incidents which led to a significant public reaction. For this reason these are discussed in the later section: Responses to Public Discourse, rather than this one on historical factors.

It is clear from the literature and the data collected that organisational culture, structure, historical factors and the national differences discussed later are all inextricably bound together and that it is impossible to entirely separate them. This is discussed further in the discussion section at the end of this chapter.

5.3 Economic Factors

5.3.1 Long and short term planning and first mover factors

Grant (2003) found that Shell had longer long term planning horizons than many other oil companies, but that their analysis of the business environment was primarily qualitative, to encourage creative thinking, and didn't involve any commitment of resources. In terms of committing resources the emphasis was on the medium term, defined as 5 to 10 years (Grant 2003 p8). Shell's position can be characterised as being strongly committed to medium term investment while having one eye on the long term future. In contrast Exxon was characterised as emphasising shorter term profitability and focusing on investments that will maintain that profitability (Grant 2003 p10-11). This would imply that Shell would be more likely to be open to longer term diversification into renewable energy, whereas Exxon for example would be more likely to wait until it was clearly going to produce returns that would be comparable to other areas of its business.

Roger Booth (2006) confirmed that traditionally Shell had a reputation for having longer planning horizons than was typical among the American oil companies. He said that at Shell the emphasis was on keeping the company viable in the long term, whereas companies based in the United States put more emphasis on short term share values.

Grant (2003) also found that strategic planners at Shell were less concerned with financial targets, and integrating strategic and financial planning; again this suggests that they were more likely to be thinking of the long term viability of the organisation, rather than shorter term profitability. For this reason it is likely that they would be less dismissive of calls to restrict greenhouse gas emissions and accept calls for investment in renewable energy. In comparison a company such as Exxon would be more likely to attempt to block or delay restrictions on emissions if it would protect its short term profitability.

Frynas (2003) argued that Shell's move into renewable energy was part of a rational decision making process; that Shell was analysing trends and events and planning a course of action that would be best for its long term future. David Hone (2006), Shell's chief climate change advisor corroborated this saying that the

company's principal reason for supporting action on climate change and starting to invest in renewable energy was to ensure that the business was sustainable in the long run. He said that the aim was that renewable energy should form a central part of Shell's business, and therefore be a substantial source of income by the middle of the twenty first century.

Jim Dawson, the president of Shell Renewables at the time of its foundation, emphasised that the company was not investing in renewable energy for philanthropic purposes or simply to improve the company's image. It was doing it because they thought that there were commercially viable opportunities that they wanted to profit from (Weston 1997).

On the basis of this evidence, and projections in the scenario reports, it is clear that there was a belief that in the long term the energy market would inevitably move away from carbon based fossil fuels and towards renewable energy. Senior managers at Shell felt that it was better to acknowledge this and actively embrace the change rather than trying to delay or block it. To ensure the organisation's long term viability Shell managers felt that it had to ensure that it started to gain expertise in renewable energy technology and have a presence in the market as it developed.

Mark Moody-Stuart's (2006) comments confirm this; he said that Shell management saw climate change, and by implication calls for restrictions on greenhouse gas emissions, as a serious threat to their business. They felt that it was better to acknowledge this and start working towards solutions rather than trying to deny the fact or delay the inevitable.

Mark Moody Stewart said that the aim was to judge the point at which to enter the renewable energy market, not entering too early before the market was viable, but not leaving it too late and loosing the advantages of being an early entrant. As Lieberman and Montgomery (1998) found, Shell had the difficult decision of deciding which technologies to invest in, in an emerging market. Shell's investments in renewable energy were large in the context of the renewable energy market, but relatively small in the context of Shell's overall investments. Although these investments were not of great significance to Shell's overall

economic performance, they were certainly symbolic of an oil company investing in alternative technologies. Shell managers felt that they also gained some legitimacy as a result of being seen as early movers in the renewable energy industry, compared to other major oil companies.

Data gathered during the interview with Rob Hastings (2006), vice president of Shell Renewables, and also in research by Leggett (2000 p209), confirms that Shell was primarily interested in making profits from technology that was already commercially viable rather than investing significant sums of money in developing new technologies with the aim of making them commercially viable in the future (Leggett 2000 p209).

This was corroborated by Moody-Stuart who said he felt that Shell managers did not particularly feel that the company should be a leader in developing renewable energy. Again he said that Shell simply took the position that it was better to build up a knowledge base from an earlier stage, once it was profitable, but before it was necessarily as profitable as its core businesses. In contrast he suggested that Exxon would simply buy its way into the renewable energy market as soon as it became as profitable as its core fossil fuel business.

This is backed up by Boyle (1998) who suggests that companies such as Exxon attempted to delay action on climate change for short term cash benefits, rather than because they had "a serious alternative business view" (Boyle 1998 p3). There was a suggestion that they may even have attempted to delay the implementation of the Kyoto treaty simply on the basis of a financial cost-benefit analysis. The cost of supporting an organisation such as the Global Climate Coalition would be small compared to the potential financial gains of delaying the implementation of the Kyoto treaty.

Lieberman and Montgomery (1998) suggest that companies with innovative research and development capabilities are more likely to benefit from early entry. Lord Oxburgh (2006) said that he felt that one of the reasons that Shell had been more proactive earlier in the area of climate change policy was the fact that the company had a particularly strong base in scientific research and engineering. This thesis does not quantify Shell's level of expertise in particular areas and Lee

Raymond, Exxon's chief executive who consistently denied the significance of climate change has a PhD in chemical engineering. However a good technical understanding at Shell of the issues surrounding climate change, and of the technologies involved in potential solutions, may have led to a greater openness to acknowledging the issue.

5.3.2 Leaving the Global Climate Coalition

In early 1998 Shell was the second major oil company to announce that it was leaving the Global Climate Coalition. This was however around a year and a half after BP made the same decision. Similarly in October 1998 Shell pledged to reduce the greenhouse gas emissions from its own operations, this was a month after BP made a similar announcement.

In both these cases Shell was an early mover, in the context of the oil industry, but appeared to be following BP's example rather than wanting to lead the way. Mark Moody-Stuart's (2006) comments about the actions of the Global Climate Coalition becoming incompatible with Shell's position after Kyoto are however rather disingenuous as it was quite clear what the Coalition stood for well before the Kyoto treaty was signed.

Again this seems to back up data, from individuals such as Mark Moody-Stuart, which indicated that senior managers in Shell didn't necessarily see the organisation as having to be a market leader in environmental policy. They felt that in this case it was appropriate to be an early mover, but that it was better to hold back slightly and gauge the public reaction before acting. The evidence paints a picture of an organisation with a cautious management style. This is in line with the findings in section 5.2.1 on the organisation's management structure, and having a committee style board of directors, as opposed to a powerful chief executive.

5.3.3 Carbon intensity

Rowlands (2000) hypothesised that the carbon intensity of an energy company's product portfolio, and the extent to which it operated in the third world, may influence its acceptance of restrictions on greenhouse gas emissions. These were also suggested as possible factors by Skjærseth and Skodvin (2001). Rowlands analysed data collected in his study of BP and Exxon and found no evidence that these factors were significant, he therefore rejected this hypothesis. Similarly the data collected for this thesis showed no evidence that Shell's position was linked to it having a product portfolio with a particularly low carbon intensity, or the extent of its operations in the third world.

Shell did claim, at the end of the 1990s and into the 21st century, that it was working to reduce the carbon intensity of its products, in order to fulfil its commitment to reduce greenhouse gas emissions. For example, a speech made by Philip Watts in November 1997, stated that Shell supported measures to reduce the carbon intensity of energy supplies, in anticipation of the outcomes of the Kyoto negotiations. This was however well after the company's position on climate change had been established. There is therefore no suggestion that the carbon intensity of Shell's products influenced its position on climate change. The conclusions of this thesis therefore reinforce Rowland's (2000) rejection of his hypothesis.

5.4 Response to Public Discourse

5.4.1 Shell responds to a European Perspective

Authors such as Skjærseth and Skodvin (2001) suggest that organisations will tend to respond to the demands of the society where they are based and where they have their historical roots.

Shell has its main offices in the Netherlands and the U.K., but according to Skjærseth and Skodvin even the UK offices are "heavily influenced by Dutch culture, society and policy" (Skjærseth & Skodvin 2001 p46). While this may be true, Shell is a multinational organisation, operating in a global market. As an organisation, Shell makes a particular point of encouraging its senior managers to spend time working in Shell companies around the world in order to broaden their experiences. Shell is known for its strongly cosmopolitan outlook. (Sampson 1975 p81; Frynas 2003 p278).

The position of Chair of Shell's Committee of Directors has traditionally alternated between a British and a Dutch man. Cor Herkstroter, a Dutchman, took over from Sir Peter Holmes, and Englishman, to become chair of Shell's committee of directors in 1993 and then led the organisation through the time of the Kyoto treaty. He was succeeded in 1998 by Sir Mark Moody-Stuart, an Englishman, who was also supportive of a pro climate change position.

Benjamin Diss (2006) made it clear that he thought one of the most significant reasons why Shell took the position it did on climate change was because it was based in Europe. He said that the public in Europe simply would not accept an organisation denying the need for action on climate change, although this was acceptable in the United States. He said that this same influence of public opinion was also clearly evident in oil companies advertising in Europe and the U.S., with European advertising focusing on sustainability, and U.S. advertising focusing on energy security.

Lord Oxburgh (2006) said that although some U.S. companies had accepted the need to address climate change, he thought there was a fundamental difference in attitudes between Europe and the United States. He said that for historical

reasons the debate in the U.S. had always been more polarised, with business lobbies and environmental groups taking more extreme positions than in Europe.

There was some particularly strong evidence for the influence of different national outlooks evident in the mid 1990s. Shell found itself in a dichotomy as its US based operations took a more sceptical position on climate change and continued to actively support the Global Climate Coalition. At this time its European headquarters were being increasingly vocal about the need to take action to combat climate change. When this contradictory position was publicised by environmental NGOs it led to Shell headquarters in Europe forcing Shell in the U.S. to follow the European position on climate change.

This was confirmed by Roger Booth (2006) who commented that in the mid 1990s Shell's US operations were following the norms of the U.S. oil companies. They were more supportive of the Global Climate Coalition, and appeared to be at odds with Shell's European headquarters on the issue of climate change. He confirmed that this led to allegations of double standards and forced a change in policy by Shell in the United States.

Mark Moody-Stuart (2006) also said that he thought that workers were influenced by the societies in which they lived, and in turn influenced the positions of the organisations in which they work. However when asked specifically whether being based in Europe made a difference to Shell he said he didn't necessarily think so because some American companies had been proactive in addressing climate change. Although this is true it does not necessarily indicate that public national attitudes are not significant. A European company would come under pressure if it took a position which was felt to be unacceptable by the public. Companies in the U.S. which were taking more proactive positions were going beyond what was seen as necessary by the public, and not doing something that the public would regard as unacceptable. The standards in Europe and the U.S. were different. Just because some U.S. companies chose to go beyond what was regarded as necessary does not invalidate the argument that national differences in public discourse were influencing the positions that organisations took.

5.4.2 Legitimacy

There was considerable evidence in the literature to suggest that maintaining legitimacy was important to Shell when deciding the position the organisation should take on a range of issues including climate change.

Levy and Kolk (2002) and Livesey (2001) discussed the influence of legitimacy in the wake of the Brent Spar and Nigeria crises in 1995. Skjærseth & Skodvin (2001) suggest that a company such as Shell, with experience of intense public scrutiny, would be more likely to take a positive position on climate change policy. Frynas (2003) suggests that the position Shell took on climate change was strongly influenced by the negative publicity it had experienced over Brent Spar and Nigeria.

It is clear from the literature and the data collected for this thesis that Shell's experiences over Brent Spar and Nigeria had a profound effect on the thinking within the company. Shell's initial view, particularly in the case of Brent Spar, was that their technical expertise and rational choices would lead to a clear decision on the best course of action. In both cases Shell management felt that it had 'done the right thing' and was then taken by surprise by the extreme negative reactions that followed. These two crises coincided with the declining influence of national governments with which Shell had previously had strong relationships, and the increasing power of environmental NGOs, which saw oil companies such as Shell as natural targets.

At first Shell appeared to react by taking defensive, buffering actions, but then changed to taking a bridging strategy. The evidence suggests that the Brent Spar and Nigeria crises changed the way Shell perceived it should react to external threats. Mark Moody-Stuart (2006) said that it made Shell management realise that it was getting things wrong, that it needed to understand why, and make changes.

Livesey (2001) argues that "most importantly [it] produced a transformation of Shell's traditionally secretive and inward-focused culture" (Livesey 2001 p80). "Thus, the company began to experiment with new, unfamiliar, and potentially democratising forms of communication, including websites dedicated to discussion

and debate on Spar, Nigeria and other issues, for example global warming" (Livesey 2001 p80).

Philip Watts, in a speech in 2003, emphasises that Shell realised that it had to put work into maintaining its reputation and building public trust. He acknowledged that this needs to be seen as a long term process, and that perceived failures can very quickly set these efforts back. Lord Oxburgh (2006) also said that Shell realised that it had to learn lessons and improve its public relations and Roger Booth (2006) spoke of an understanding of the need for systematic stakeholder analysis to understand what different groups expected of the organisation. Other senior Shell executives also spoke of regaining the public trust and rebuilding the organisation's reputation. Shell's decision in 1998 to spend $30 million employing communication consultants is graphic evidence of the organisation's belief that stakeholder opinions and organisational legitimacy were of critical importance.

This is supported by Frynas' (2003) assertion that Shell has made these changes to the way it does business, and particularly the way it communicates and presents itself, in order to build legitimacy with a more diverse range of stakeholders in a changing organisational field. According to Frynas this has "brought Shell tangible benefits, it gained some NGOs support and much of the negative focus moved onto the US oil majors" (Frynas 2003 p282).

David Hone (2006) said that although he felt that Shell's position on climate change was largely an attempt to make the organisation sustainable in the long term, an important secondary effect was that it improved the company's image and countered some of the bad press it had previously i.e. it had a positive effect on the organisation's legitimacy.

A visible expression of the changing attitudes was the revision of Shell's statement of business principles to emphasise the need for improved communication and the need to engage with stakeholders. Roger Booth (2006) in particular said that this led to a change in the approach to decision making, to include considering the possible public reactions to any potential position that the organisation may take.

Shell's statement of business principles also, rather disingenuously, claimed that social and environmental issues would be given as much importance as its financial performance. This could easily be seen as green-wash and was never likely to be realistic given the financial demands of shareholders.

Speeches by Shell's senior managers regularly referred to the three pillars of sustainable development: social, economic and environmental development. This often appeared to be an attempt to maintain legitimacy at times when there was the potential for allegations that the company wasn't doing as much for the environment as it could have been. Speakers regularly invoked Shell's contribution towards economic development throughout the world, and social development in the developing world, to explain why it wasn't doing as much as some environmental NGOs might have liked in the area of environmental development.

While it must be remembered that Shell's position on climate change was being formed in the late 1980s and early 1990s, before the Brent Spar or Nigeria crises erupted, it is inevitable that these crises would have influenced the company's thinking in the run up to Kyoto in 1997. After the strong negative criticism the company experienced it would not have wanted to come under the same criticism for not being seen to be supportive of a treaty to combat climate change. Frynas (2003) also makes a link between Shell's experiences with the Brent Spar and Nigeria, and the decision to leave the Global Climate Coalition, again in order to avoid the criticism it had previously experienced.

Skjærseth & Skodvin (2001) argue that the fact that there has been strong public demand for action on climate change in the Netherlands, and a willingness to pay for more environmentally sustainable products, meant that Shell would have seen a proactive climate change strategy as the less risky option, and less likely to lead to consumer boycotts (Skjærseth & Skodvin 2001 p61). This would appear to be a direct reaction to the company's experiences with the Brent Spar.

In the case of climate change, as with the disposal of the Brent Spar, it is evident that national Shell companies had a degree of autonomy in decision making, but also that the Shell's central management will direct individual companies to

change their course if the organisation as a whole is being adversely affected. This also shows that although individual parts of the organisation may have considerable autonomy the public still perceive Shell as being a single entity. Negative reaction to the actions of one part of Shell can compromise the legitimacy of the organisation as a whole.

5.4.3 The Logic of appropriateness

The change in Shell's top management's way of thinking as a result of the Brent Spar and Nigeria crises can be thought of in terms of the logic of appropriateness. Before the crises Shell's senior management saw themselves as technical experts, adept at assessing a situation and making a logical, rational decision on the best course of action, independent of outside opinion. After the crises it became apparent that the organisation's external environment had changed and that this was no longer an appropriate way to make decisions. A key element of appropriateness is maintaining legitimacy in the eyes of others, and the outcomes of Shell's decision making were no longer seen as legitimate in the public's eyes. In the case of the Brent Spar in particular, they could no longer defend their position with rational arguments. "The Brent Spar became a symbol of unacceptable corporate behaviour towards the environment" (van der Bosch & van der Riel 1998 p28). Senior management at Shell recognised this and knew that they had to be seen to change their approach.

Individuals in Shell then started to feel that they were working in an organisation that was progressive and responsive to a wider range of issues and stakeholders. It was therefore then appropriate that they should be taking a proactive position on climate change and be seen to be supporting positive actions such as the Kyoto protocol.

5.5 Influence of National Policy and Regulation

Skjærseth and Skodvin (2001) suggest that government policies and regulations will have a strong influence on a company's position on climate change. Several authors including Frynas (2003) commented that Shell had traditionally had close, and carefully managed, relationships with national governments. Skjærseth and Skodvin (2001) also discussed the style of national policy making in the Netherlands, which involved close cooperation and consensus building with industry and other interest groups.

It is therefore likely that these political moves in Europe, and Shell's close relationship to the Dutch government, would have led to the company having some input into climate policy, and that Shell's position would also have been strongly influenced by Dutch policies. Dutch climate policy has been among the strongest and most proactive in the world, including legal instruments, financial incentives and explicit long term plans which send out clear signals to industry. When European ministers were discussing the possibility of an energy tax in the early 1990s, to control greenhouse gas emissions, the Dutch government threatened to impose it unilaterally if the rest of Europe failed to come to an agreement. There was an expectation that there would be increasingly stronger regulations in the future. At this time European companies would have needed to face the fact that they might be forced to take action to control greenhouse gas emissions and would therefore have taken a position to reflect this possibility.

This was in stark contrast to the United States where the first Bush government was never sympathetic to calls for controls, and although the subsequent Clinton government was in principle supportive of the Kyoto protocol, at no time were there well developed plans to impose controls on greenhouse gas emissions. U.S. based companies would therefore not have had this strong source of influence on their policy decisions.

Skjærseth and Skodvin (2001) argue that the fact that the Dutch government has had a strong and clear policy on climate change, combined with the fact that Shell has traditionally worked closely with national governments, was a significant factor in Shell having a proactive policy on climate change.

During the data gathering the only two interviewees who talked about the importance of government policy were Mark Moody-Stuart (2006) and Lord Oxburgh (2006). Both of them made the opposite point to the one suggested by the literature. They were both concerned by the lack of clear, structured, long term government policy and the fact that it left Shell without a coherent framework within which to make long term investment decisions. Moody-Stuart seemed to be referring more specifically to the situation in Britain, but Lord Oxburgh spoke about the wider European perspective, and talked about European Union policies. Neither of them spoke about the influence of Dutch government policy on Shell.

It would appear that none of the people interviewed for this thesis perceived that strong national policies had been a contributing factor to Shell's proactive position on climate change. This may have been because although the interviewees had been among the most senior people in Shell, they had predominantly been based in Britain where government policy on climate change has been much less decisive than in the Netherlands. They would however have been aware of the situation in the Netherlands. Several speeches by Cor Herkstroter a former Chair of the Committee of Directors, and a Dutchman, were used as secondary data and he also made no mention of the influence of Dutch government policy.

The data did not suggest any perception among the interviewees that strong government policies in the Netherlands had a positive influence on Shell's position on climate change. This does not mean that they had not had any influence; just that Shell's senior management had not perceived it as a significant factor.

5.5.1 Shell's influence on policy making

There was some evidence to show that Shell had used its reputation and expertise to influence policy making. For instance when the European Union was formulating plans for an emissions trading scheme Shell played an important part in the consultation because of its experiences with an internal emissions trading scheme. Similarly it has contributed its expertise in scenario planning in a range of different arenas. There was no suggestion however that this had influenced the company's own position on climate change.

It has been suggested that individuals at Shell thought that if they supported the negotiations at Kyoto, then it would be more likely that the protocol would be adopted. The resulting requirements to reduce greenhouse gas emissions would lead to an increase in demand for renewable energy and that would have made Shell's decision to invest in renewable energy more viable. There was however no evidence in any of the literature, or data collected for this thesis, to suggest that this may have been a strategy that Shell had adopted. Although Shell was broadly supportive of Kyoto, at no point did the language used in the company's statements seem strong enough to suggest that they felt that they would actively gain from having the treaty adopted.

5.6 The Role of Key Individuals

Hambrick (1984) discusses the ways in which the backgrounds of senior management can influence their perceptions and responses to particular issues. He suggests that organisations whose top management team have all worked their way up through the organisation are likely to have narrower perspectives, and come up with less innovative solutions to unprecedented problems.

Shell has a tradition of people working their way up through the company, and most of the senior management have spent a significant part of their careers in the organisation. Shell does however also have a policy of sending their senior managers to work in different Shell companies around the world to increase their range of experience, and broaden their perspectives. This would tend to counter the effects of working for a long time in one organisation.

There was no evidence in the data gathered for this thesis that Shell's position on climate change had been significantly influenced by the fact that many senior individuals had spent much of their working life in the organisation, or because they had a wide range of experiences as a result of having worked in several different countries. It was theorised by Hambrick (1984) that the background and education of key individuals may be significant in their later decision making. It could be argued that Mark Moody-Stuart's background in geology gave him a better understanding of global environmental processes, which led him to be more environmentally proactive. In the interview carried out with him he did in fact mention early scientific evidence of global environmental changes, which had influenced his thought. However his predecessor, Cor Herkstroter who was Chair of the Committee of Directors in the years running up to Kyoto, when Shell's position on climate change was being defined, has a background in economics which would not have given him any obvious specific insights into climate change.

The personal leadership of the Chairs of the Committee of Directors was cited several times in the data as being an important factor in influencing Shell's position. Mark Moody-Stuart was mentioned in particular as being someone who was particularly outspoken about climate change. His role could be seen as comparable to that of Lord Browne at BP who was credited by Rowlands (2000)

as being a charismatic leader who shaped BP's environmental policies. However Mark Moody-Stuart only became Chair of the Committee of Directors in 1998, the year after Kyoto, and three years after Brent Spar and Nigeria, which were seen as turning points in Shell's attitudes. It is clear that although he may have played an important part in crystallizing Shell's position on climate change and bringing it to the outside world; he didn't initiate the move towards a more pro environmental stance. Shell's position on climate change was clearly taking shape in the early 1990s when Cor Herkstroter, and Peter Holmes before him, was at the head of the company.

Previous Chairs of the Committee of Directors did not always appear to take a pro environmental stance. In 1991 Sir Peter Holmes said oil and gas would continue to be major industries for the next fifty to hundred years as there were currently no viable alternatives to the internal combustion engine (Leggett 2000 p71). Mark Moody-Stuart said during the interview that, to his surprise, Cor Herkstroter had made some comments about the potential seriousness of climate change in 1993, just over six months after becoming Chair of the Committee of Directors. Herkstroter was not however seen as a charismatic leader and the individual roles of Herkstroter or Holmes were not singled out by anyone as having had a significant impact on Shell's position on climate change.

It is clear that Mark Moody Stewart is perceived as a charismatic leader, and remembered as someone who made outspoken statements about the need to address climate change. This would appear to be the case because of the length of time that had passed since the earlier Chairs were in position, and the fact that Mark Moody-Stuart had a reputation for being outspoken on the subject. The evidence however shows that he didn't play a significant part in determining Shell's position on climate change. There is also no evidence to show that previous Chairs of the Committee of Directors played a major personal role in determining Shell's position on climate change.

The data gathered for this thesis therefore suggests that Shell's position was not significantly influenced by the views or actions of any one key individual.

5.7 Discussion

As an organisation, Shell certainly appears to have some defining qualities that set it apart from the rest of the oil industry. Many authors have discussed Shell's unique history as a partnership, its committee of directors without a powerful individual chief executive, its corporate culture that encourages free speech among its employees, and its organisational structure that gives individual operating companies a considerable degree of autonomy. This does not however mean that these were necessarily the key factors that caused Shell to take a position on climate change that set it apart from the norms of the oil industry.

It is clear from this research that there were a number of factors, and events, which had an influence on Shell's position on climate change. It is only by studying the way they developed over time, and establishing a course of events, that one can fully understand Shell's current position. Path dependency theory is a particularly useful framework to use for the data analysis. This is because of its recognition of the importance of key events and decisions earlier in the historical sequence, and the lasting influence they can have in setting particular courses of action into motion.

An underlying factor in determining the position Shell took on climate change was the fact that the organisation was based in Europe as opposed to the United States. This meant that it was subjected to public discourses and opinions that would have reacted negatively to a large fossil fuel company denying the significance of climate change, and refusing to support action to address the issue. The Netherlands, where one of Shell's parent companies was based, had a public with a particularly strong concern for environmental issues, and especially climate change.

A further underlying factor was that European governments, both through the European Union, and also individually, appeared to take a strong position on climate change in the early to mid 1990s. The Dutch government was particularly proactive in formulating climate change policy: making unilateral decisions to give incentives and apply pressure on industry to reduce greenhouse gas emissions. Shell was therefore operating in an institutional environment where an acceptance

of climate change and the need to take precautionary action was the norm. Shell's history of building close links with national governments, and therefore contributing to the national policy making process would only have served to enhance the influence of this institutional environment.

In contrast this research found no evidence that Shell's history as a partnership, and its organisational structure had a significant influence on the company's position on climate change. The policy seemed to have been driven from the top down, as opposed to having worked its way up the organisation form a grass root level. For this reason the overall organisational structure appears to have had little influence. For the same reason the culture within Shell of internal openness and accepting criticism and dissent didn't appear to directly affect the company's position on climate change.

It is clear that the events surrounding the Brent Spar and in Nigeria in 1995 were of profound importance to Shell. The level of negative public reaction to events where Shell management felt that it had taken appropriate courses of action took the organisation by surprise. These were events that were unique to Shell and had impacts that were specific to the organisation. Shell's response to these events was however shaped by its organisational culture, and although its initial response was defensive, once the organisation realised it was vulnerable it quickly moved to take bridging strategies. Shell then became more open to discussions with a wider range of stakeholders and sought to understand external criticisms. This led to an understanding among key individuals that the organisation had to take the opinions of the public, and other stakeholders, into consideration if it was to maintain legitimacy and avoid the negative reactions it has previously encountered.

The position on climate change that Shell had already started to adopt, as a result of the influence of public discourse and governmental policy in Europe in the early 1990s, was then reinforced by the understanding gained in the years after the Brent Spar and Nigeria crises the mid 1990s. Once the company had publicly taken the position of being a socially and environmentally responsible organisation, the only appropriate course of action was for it to support the Kyoto negotiations. No other course of action would have seemed possible.

There were certainly key individuals within Shell who supported the organisation's position and were vocal in promoting it publicly. There was however no evidence that Shell's position had been significantly influenced by the views or action of any one person. The one person who was seen as a charismatic leader who promoted a pro climate change position only rose to the top of the organisation after its position had already been clearly established. As an individual, there was no evidence that his views had contributed to the formation of Shell's position in the key period of the early to mid 1990s.

It is clear that individuals who reach the most senior positions in Shell are likely to have views that are in line with the organisational position. Additionally the committee structure of the senior management means that it is much less likely that any one individual will have a profound impact on the organisation's overall position.

The use of scenario planning, as a key part of its strategic planning process, was a factor that several authors claimed set Shell apart from the rest of the oil industry. This research however found that there was little evidence that the nature of Shell's planning process and the use of scenarios had a significant influence in the organisation's position on climate change. The development of Shell's position does not seem to have mirrored the discussion of climate change in the scenario reports. It is evident that over the course of time the speeches by Shell's senior managers, an indication of the organisation's position on climate change, seem to mirror the development of the public discourse much more than the discussions in the scenario reports.

Previous research had found that Shell had longer planning time horizons than some other oil companies, but again data gathered for this thesis found there was little evidence to show that this had a direct influence on the organisation's position on climate change.

It is interesting that although Shell was clearly one of the most progressive of the major oil companies in regard to climate change, and a major developer of renewable energy, key individuals didn't particularly see the organisation as a

market leader. They simply felt that they had to choose a strategy that would put the company in the best position possible to deal with the challenges that the debate over climate change would result in, and also profit from emerging renewable energy technology and markets. This would actually appear to be a relatively conservative strategy of risk minimisation rather than an organisation trying to actively lead or shape the market. It would also fit with evidence that the focus of Shell's strategic planning was the organisation's long term viability.

It could be argued that Shell was trying to emulate BP's position, as it appeared to follow BP's lead on more than one occasion. There was however no evidence in the data to suggest that Shell's actions were directly inspired by those of BP, or alternatively a reaction against the actions of any other oil company. Strategists at Shell undoubtedly analyse the actions of other companies in the industry, but there was no suggestion that the organisation's position on climate change was directly linked to them.

From a theoretical point of view, although some of the literature differentiates between organisational culture, structure, historical factors and national differences, it is clear that in reality they are all inextricably bound together and that it is unrealistic to attempt to entirely separate them. Organisational culture and structure influence each other, as acknowledged by authors such as Barney (1986) and Andrews (1994), but they are also influenced by variations in national cultures and outlooks, as well as of course the history of the organisation and the events that its staff have experienced. In a study of an organisation it would be impossible to isolate the influence of any one factor from that of the others.

Path dependency theory, as discussed by Pierson (2000) did prove to be a useful theory to bring to this research. As discussed in the literature, it suggests that sequences of events may be self reinforcing, and therefore that early events may have a more profound influence on an overall course of action than later ones. It was evident from the data that earlier events and decisions had led the organisation to a position where later courses of action became inevitable. The combination of the influence of being based in Europe and then Shell's crises over Brent Spar and in Nigeria irrevocably shaped the position the organisation took on climate change.

The suggestion that earlier events in a sequence may have a more profound influence on eventual outcomes than more recent ones of course depends on the time frame being considered (Pierson 2000 p253). Early historical events, from well before the time when the issue in question was important, may have had little influence, although it is still possible that they may have set in course a chain of events that later did prove to be significant. In the case of this research earlier events in Shell's history were not found to be particularly significant in determining Shell's position on climate change.

Chapter 6

Conclusions

This chapter reviews the research that was carried out for the thesis, it considers how successfully the research answered the original question and looks at its strengths and weaknesses.

It then discusses the theoretical conclusions, and the effectiveness of the methodology used, comparing it to those used by other authors carrying out similar research.

Finally it looks at the implications this thesis has for policy makers working in the area of climate change, and considers the implications for further research.

6.1 Discussion of research question

The aim of this thesis was to explore the reasons why Shell chose to position itself the way it did, in the debate over climate change that emerged between the late 1980s and the end of the 1990s. It aimed to build up a picture of the environment surrounding the organisation so that key sources of influence could be analysed. A central feature of the research was the use of a case study to allow the incorporation of a range of data sources.

It succeeded in using a range of primary and secondary data sources, presenting them in the form of a historical narrative, to provide evidence that successfully addressed the research question. The nature of the case study methodology and use of a 'snowballing' sampling strategy meant that the data gathering process was never entirely predictable. It did however allow the data gathering to be guided in specific directions as it progressed, and potential new sources were revealed. Some data sources and interviews that hadn't been initially foreseen eventually proved to be useful in the final analysis. For example interviewees often referred to documentary sources that would otherwise not have been found, or suggested other individuals who could provide useful information.

The findings clearly showed how the awareness of climate change grew within the fossil fuel industry and also the difference between Shell's position and the norms of the industry. It showed how Shell's position developed, from the early public statements acknowledging the potential significance of climate change and the importance of taking precautionary action, to Shell's eventual rejection of the Global Climate Coalition, support for Kyoto, and enthusiastic investment in renewable energy.

The research used data derived from interviews to show how key individuals viewed these developments in Shell's position and the reasons for those developments. Those views were triangulated using material from media sources, published reports and research by other authors. It looked at the relative importance of factors such as the structure, culture and decision making processes within Shell, historical and economic factors, the influence of public discourses and governmental policies, and the part played by key individuals. It

used these findings in order to analyse the reasons why Shell adopted the position it did.

A key aim was to build up a historical perspective of developments in the external environment, and the way in which Shell responded, rather than to take a static 'snap shot' of the position Shell was in at any particular time. The data collected allowed the thesis to successfully achieve this aim.

This research did not set out with the intention of proposing hypotheses to be proved or disproved. Its aim was not to collect statistical data to prove in a positivistic fashion the factors that were or were not significant. The aim was to build up a deeper understanding using qualitative data, it was accepted that this leads to some degree to a loss of generalisabilty. This is an inevitable compromise, acknowledged at the start, and made in return for a more in depth understanding of this particular case.

The results showed that Shell's position was primarily influenced by public discourse and the policy making process in the countries where the company was based. This was then accompanied by a desire for legitimacy which was emphasised by the negative public reaction Shell had experienced as a result of two crises specific to the company.

The study was carried out into the response to the debate around climate change, because it was seen as an issue that had the potential to call into question the long term viability of the fossil fuel industry's core products. It would also have been possible to study the depletion of finite oil reserves, another topic that potentially calls into question the long term viability of companies such as Shell. There has not yet however been any significant public acknowledgement of the importance of the depletion of finite oil reserves. There hasn't therefore been established an industry norm that an individual organisation could deviate from. It would therefore not be meaningful to seek to analyse why any organisation took a particular position on the issue.

The reliability of the study is ensured by the documentation of the research procedures used. This thesis contains details of the data sources and research

techniques used. The appendices include information on the questions used to guide the interviews. This would allow a future researcher to repeat the data collection and analysis if desired. The findings chapter contains significant amounts of primary and secondary data that allows the reader to follow the analysis through to its eventual conclusions.

6.2 Theoretical conclusions

This thesis found that institutional factors were of particular significance in determining the position Shell took over the period in question, a time of considerable uncertainty with regard to the issue of climate change. This concurs with the view put forward by authors such as Levy and Kolk (2002) that a simple economic analysis of the costs and benefits to the company of taking a particular course would not have provided a useful explanation of why Shell took the position it did.

Levy and Kolk's conclusions are primarily based on the differences in the expectations of future environmental regulations, and public attitudes towards climate change and the roles played by multinational companies. As their study was a comparative one, it did not look in detail at the experiences of the individual organisations and the key events that effected them. While acknowledging the Brent Spar and Nigeria crises it did not study their influence in depth. It therefore did not capture the full effect that they had on Shell's management and their subsequent influenced on policy making. This thesis fills that gap by taking a historical perspective and studying these key events in detail.

This thesis also found that Shell's strategic planning process put more of an emphasis on a long term outlook, and was more focused on the overall viability of the organisation than shorter term financial returns. This is in line with Grant's (2003) findings. There was some evidence that this had influenced the position Shell took on climate change. However the more in-depth analysis of Shell's scenario reports, contained in this thesis, suggests that on the topic of climate change scenario planning played little part in shaping the organisation's position. This would appear to be contrary to what Grant's research might suggest. That is not to deny that scenario planning could have been important in other areas of strategy making. Again this thesis's in-depth analysis of a particular area of strategy making reveals more detailed insights than are gained from Grant's broader comparative study.

By using a single case study methodology, this thesis successfully carries out a detailed investigation into the link between the organisation's historical context, the

Brent Spar and Nigeria crises, and subsequent policy making. As stated before, this is in contrast to previous comparative case studies and also research such as Frynas (2003), which study Shell's response to the events surrounding the Brent Spar disposal and operations in Nigeria. Frynas' study is a revealing insight into Shell's policy making and the way it reacted to these two crucial events, but it does not discuss in any detail the relationship between these events and the historical context. Although Frynas does suggest that lessons learnt as a result of Brent Spar and Nigeria influenced the company's subsequent strategy making, the author doesn't discuss this in detail.

This thesis successfully demonstrates that an organisation can take a proactive and distinctive position without needing to have a charismatic leader. This is in line with (Tsui et al. 2006), but in contrast to Rowlands (2000) who suggested that a key factor in determining the contrasting positions of BP and Exxon was the parts played by their powerful and charismatic leaders. Rowlands suggests a number of contributing factors that differentiate BP and Exxon's positions, but by his own admission fails to establish a direct link between cause and effect. By using a historical narrative, this thesis manages to clearly establish a sequence of events which gives credence to the link between the position Shell took and the contributing factors.

The existing literature contains many studies of corporate responses to the issue of climate change often in the form of comparative case studies of European and American companies; there are also studies of particular aspects of Shell's actions, particularly those surrounding the crises involving the Brent Spar and Nigeria. The unique contribution of this thesis is that it brings these multiple elements together in a single case study. It put Shell's response to climate change, an issue of global significance, into a historical perspective, showing how events developed and shaped thinking within the organisation, leading it to take the eventual position it did.

Was the theoretical perspective effective?

In terms of theoretical models, March and Olsen's (2005) 'Logic of Appropriateness' proved to be useful for explaining the events observed. The proposition that individuals act in ways that they feel is appropriate fitted in well

with the changes evident in senior managers' attitudes as a result of Brent Spar and Nigeria. March and Olsen's discussion of how actors react in times of change, and the argument that "there is a search for new conceptions and legitimations that can produce a more coherent shared account" (March & Olsen 2005 p15-16), perfectly describes these changes that occurred at Shell.

Cohen et Al.'s (1972) 'Garbage Can Model', on the other hand doesn't appear to fit particularly well to the data gathered for this thesis. Although it is claimed that it is more likely to be relevant in times of uncertainty and where goals are not clearly defined, the assumption that decision making processes are often at least to some extent chaotic doesn't appear to be applicable in this instance. On the contrary, Shell's information gathering and strategic planning processes appear to be well thought out and consistently applied. For this reason, although one might have thought the 'Garbage Can Model' could have been applicable in this instance, it did not appear to be.

Path dependency theory proved to be a useful construct to bring to this thesis; it allowed a wide variety of explanatory factors to be brought together within a single framework. It is a framework that has rarely been used to explain organisational behaviour, but it succeeded in bringing an extra insight into the explanations in this thesis.

As Kay (2005) points out it is however difficult to operationalise the concept in practical terms. Kay argues that in order to show that a course of action was path dependent one has to show that alternative courses of action could not have happened. In reality this is of course impossible. It is possible to show that what did occur was the most likely course of action, and that other courses of action had become untenable, given the initial series of events. This research showed that the most likely course of action was that Shell would support the Kyoto negotiations and their outcomes, given their responses to previous events. One cannot however prove that they could not have taken any other course of action.

6.3 Discussion of methodology

This research used semi structured interviews to collect qualitative data, in order to gain an in depth insight into individuals' perceptions of historical events. This strategy also gave the data gathering an extra degree of flexibility, allowing it to be fine tuned as the sample was built up. Some of the interview questions were altered slightly before each interview, according to the individual position and experiences of the person being interviewed. They were also sometimes adapted during the interview, in response to answers given to earlier questions.

As an alternative it would have been possible, for example, to use questionnaires to produce a standardised set of responses, but it would have been difficult to put into practice in this case as the researcher didn't know exactly who data would be gathered from, and what form their responses would take, at the beginning of the process.

If the researcher had gained permission form Shell's senior management to carry out a case study of the organisation, the sampling strategy would have been different, and possibly more structured. As a result a different data gathering strategy may also have been used.

Given the difficulty of gaining access in this case, and the fact that some of the individuals of interest were no longer working at Shell, a more opportunistic data gathering strategy had to be adopted. It was felt that the strategy used was the best way of obtaining the information required to address the research question.

Another decision that had to be made was whether to use a single case study, or a comparative one with two or more companies. The use of a single case study allowed a study of greater depth into the actions of a single organisation. It is accepted that a comparative study could have helped to explain the differences in the actions of different organisations, but it would not necessarily have helped to explain why a particular organisation took the position it did. Studying more than one organisation would have increased the difficulty of gaining access, and access to equivalent data sources in each organisation would have been required to produce comparable data sets.

The method of sampling used to chose interviewees proved to be successful in this case. Using a purposive sample allowed resources to be targeted at individuals who would be able to provide the most useful information. As there were a relatively small number of key individuals involved, this was found to be more appropriate in this case than, for example, using a randomised sample of senior managers. The evidence shows that sufficient data was collected to provide a valuable insight into the research question. There were of course other data sources that would have been useful, for example it would have been helpful to have been able to interview Cor Herkstroter, the Chair of the Committee of Directors at the time of Kyoto, but it was not possible to obtain an interview. Similarly, access to more detailed copies of the early scenario reports would have been helpful, but again these were not available. It was also disappointing not to be able to interview a representative of Greenpeace, an organisation that campaigned hard to persuade Shell to be more environmentally sustainable, although ultimately it may not have added significantly to an understanding of why Shell took the position it did.

Much of the material gathered in the interviews was of a historical nature. It was recognised that individuals' memories may become less accurate when looking further back in time. It was also recognised that individuals' perspectives on events can become distorted by the accepted organisational view, or by ex-post rationalisations. Triangulating the interview data with contemporary speeches and media articles helped to overcome these potential sources of distortion.

6.4 Policy implications

A key question that could be asked of this research is: what measures could be taken to encourage companies in the fossil fuel industry to support actions to tackle climate change?

This research found that, for Shell, the most influential factors were the public discourse and perceived threats to the organisation's legitimacy, and the expectation of increasingly tough regulations. For those in government the most effective course of action is, perhaps obviously, to put in place a clear long term strategy for tackling climate change, with details of long term plans for controls on greenhouse gas emissions. This is however something that some governments have consistently failed to do.

The evidence collected in this research indicates that stronger government action may actually be favoured by companies, particularly those which already have propensity to take positive action. The two most senior Shell executives interviewed both said that what industry needed most was a clear indication of what long term policies governments intended to pursue so that they could make investment decisions with a better idea of the future they would be facing. The consensus was also that the government should provide direction and offer incentives, but that fundamentally market forces were the best way to allocate resources to the most cost efficient ways of tacking climate change.

A challenge that national governments also face is to find ways of making companies take action without putting them at a competitive disadvantage to those based in countries with weaker controls. The Dutch government found that several large multinational companies threatened to move their operations out of Holland if they pursued policies that would lead to increased taxation of energy resources.

For those outside of government, but seeking to influence the position of commercial organisations, the most effective tool is the use of public pressure and challenges to the organisation's legitimacy. Action taken to change the public's underlying perceptions of what is an appropriate position for a company to take on a particular issue may have a considerable influence on those companies being

targeted. Changing the public's perceptions may however prove to be a slow and costly task.

Greenpeace's campaign to stop the disposal of the Brent Spar at sea was particularly effective at raising the public's awareness of a single issue. Although Greenpeace later admitted that it had got some of its facts wrong about the likely environmental impact, the campaign seemed to have had a profound impact on the perceptions of senior managers within Shell. Similar campaigns by a range of environmental and human rights organisations focused on Shell's actions in Nigeria also contributed to this change in managerial perceptions. It would appear that the short dramatic and high profile campaign around the Brent Spar had a more profound impact on the organisation, perhaps because it was closer to Shell's headquarters in Europe.

6.5 Implications for further research

There are several areas of interest that emerged as a result of this thesis, that would merit further research.

This research found that Shell was influenced by public discourses and threats to its legitimacy. This influence appeared to come through the threat of negative publicity in the media and direct action by campaigning organisations such as Greenpeace and Friends of the Earth. There did not seem to be a clear link between consumer perceptions of the company and sales of its products. Shell's marketing material tends to promote the company as a responsible organisation, rather than specifically appealing to the consumer with products that are more environmentally friendly than those of its competitors. It would therefore be interesting to study the link between customer perceptions and the position the company takes on the issue of climate change.

During this research it became clear that individuals at Shell were well aware of the positions being taken by other major oil companies. There was however little evidence that they were being directly influenced by this. Literature on organisational behaviour generally regards the behaviour of competitors as an important influence on an organisation. It would therefore be interesting to investigate in more detail the influence that the positions on climate change taken by multinational oil companies had on other companies in the industry.

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Appendix I

Outline of interview questions

The following pages contain the guides used for two of the interviews carried out.
Key questions are followed by secondary questions and potential points for
discussion.

Roger Booth

I am interested in how Shell's policy towards climate change has developed. Looking at the current policy, and then tracing it back to the early 1990s. I'm particularly interested in what was happening in the early to mid 1990's, in the run-up to Kyoto.

Shortly before Kyoto, Shell dropped its support for the Global Climate Coalition (opposing the treaty), and publicly acknowledged that climate change had the potential be a serious threat, and that precautionary action should be taken.

I'm trying to get an idea of what the mood was like within the company in the early to mid 1990's. What the feelings were about climate change and how the company should respond.

- Was the change in attitude to climate change a gradual thing that had been developing, or was it a more abrupt change in policy?
  Were there any particularly important (key) events you remember.

- Why was Shell one of the first to make the move?
  What drove the change in policy?

- Who were the key individuals in the company driving the changes, how united was the company, was there significant opposition?

- To what extent did individuals feel that they could make real changes, or did they feel that they were constrained by forces beyond their power? Or were they unwilling / afraid to challenge the, accepted views of the industry?

- What was the mood within the company at the time?
  Optimistic / pessimistic - was there a clear vision / doubt & uncertainty. Was there a feeling that Shell should be leading the industry, or holding back and taking a more cautious approach. What was the opinion of other companies - such as BP & also Exxon Mobil / Chevron Texaco.

- How well was the science of climate change known by key individuals within the company in the early to mid 1990s.
  IPCC were saying it had the potential to be a very serious a problem from the early 90s - were oil company individuals aware or not - or did they think it was incorrect?

- To what degree did Shell actively try to shape the debate and hence national and international policy - or was it essentially going with the flow?

- What were the consequences for the company of the openness about climate change (at that time)?
  How did the industry / customers / investors react.

- What do you think would have been the implications of continuing to deny climate change and oppose Kyoto - for Shell & Kyoto.

- Coming more up to date - The amount of investment is renewables is very small compared to oil. What do you think the real level of commitment is?

- What are the biggest barriers (and drivers) towards more investment in renewables?
    To what extent does the share market drive company unwillingness to diversify more decisively into renewables? Is there a fear that it would cause serious nervousness among share holders, by undermining the core business. How much power do individuals in Shell have to make changes?

Benjamin Diss

Interested in how the oil industry has responded to the threat of climate change. I am particularly interested in Shell, and the way its policies appear to differ from other oil companies.

I have spoken to individuals within the industry, but would particularly value the opinions of someone independent of the industry.

- Why does Shell appear to have been quicker and more open, than the rest of the oil industry, in admitting to the problems of sustainability and climate change?
  - Media / public pressure
  - Nationality - European Vs US
  - Historical differences
  - Areas of operation (sales & extraction)

- Have there been key individuals who have played particularly important roles?
  - Who, and what have their rolls been?

- Have there been key events or action that you would point to in the growth of Shell's policy, or has it been more of a steady evolution?
  - How big was Kyoto for the industry?
  - Significant changes in government policy

- How well informed are key individuals in the oil industry about the science of climate change? How has this changed? Does this knowledge (or lack of knowledge) play a significant part in the shaping of company policy?

- How committed do you think Shell really is?
  - Levels of investment?

- To what extent have attitudes in the oil industry, towards climate change, really changed in the last 10 to 15 years?

- To what extent are there still divisions within the industry (and individual companies) about the best courses of action?

Appendix II

Transcription protocol

The tapes of the interview were transcribed according to the following rules:

1. Speech to be transcribed as closely as possible to the spoken words. 'Umms', 'Errrs' etc. to be transcribed as closely as possible. Colloquial language to be transcribed as spoken.
2. Interviewers comments will be inserted [in square brackets] into the transcript, where appropriate, to preserve useful information that would otherwise be lost:
   [pause]
   [long pause]
   [laughs]
   [cut off]
   [interview interrupted] – for reason indicated
3. Spoken words or phrases that are not identifiable on the tape will be indicated by [????]
4. Identity of speaker will be indicated by initials at the start of each section.
5. Leave out the 'yeses' and 'ahs' and 'oks' that the interviewer says in acknowledgement of the interviewees when they are speaking, as they would break up the flow of the conversation and they don't add any information useful to the type of analysis to be carried out.

Details of key interviewees from Shell

Rob Hastings

Position
Vice President of Shell Renewables

Biography
Unknown

Data gathering
Interview took place on 16th July 2005 in the Shell Centre in London. Length approximately 45 minutes. Meeting took place in cafeteria, talked about Shell's policy on investing in renewable energy, particularly in wind generation. Discussed risks and benefits of increased investment in renewable energy, and barriers to increasing investment levels. Also talked about the management and organisational structures in Shell. This interview was not recorded due to background noise; detailed notes were taken during the interview.

Benjamin Diss

Position
Researcher working at environmental NGO called Platform London, studying the oil industry's responses to climate change.

Biography
Unknown

Data gathering
Exchange of emails between the 15th and 28th February 2006. Gave his views on why Shell appeared to have been quicker and more open in acknowledging the problem of climate change. Also discussed differences between organisations based in the US and Europe, and the parts played by key individuals.

Roger Booth

Position
Former head of Shell Renewables. Now retired.

Biography
Qualified as a chemical engineer, worked in Shell from graduation in 1961 through to 1996. Extensive experience of engineering work around the world. Moved into the development of synthetic fuels, and Shell's diversification into alternative energy sources, and then renewable energy. Became head of Shell Renewables shortly after its formation.

Data gathering
Interview carried out on the 2nd March 2006 by telephone: recorded and transcribed in full. Length approximately 1 hour. Discussed his personal experiences at Shell, particularly its planning processes, also the recent history of Shell and its early experiences in research into renewables. Also spoke about frustrations of trying to get Shell to move faster on moving towards sustainable energy sources.

Sir Mark Moody Stuart

Position
Chair of Shell's Committee of Directors between 1998 and 2001. Chief executive of Anglo American at time of interview.

Biography
PhD in geology from Cambridge University. Worked as a geologist with Shell in various countries around the world before moving to exploration in the North Sea. Then became general manager in Nigeria, Turkey and Malaysia and a regional managing director in 1991. Finally became Chairman of the Committee of Directors.

At the time of the interview was also co-chairman of the G8 Energy Task Force and chairman of Business Action for Sustainable Development.

Data gathering
Interview carried out on 18th April 2006 in Anglo American's offices: recorded and transcribed in full. Length approximately 1 hour. Discussed his experiences of working at Shell, its organisational culture and structure, attitudes and decision making processes. Also talked about Shell's public image and legitimacy in relation to climate change.

Lord Ronald Oxburgh

Position
Former Non-executive Chairman of Shell UK.

Biography
Geologist by profession. He followed a long-standing academic career with spells as chief science adviser to the Ministry of Defence and rector of Imperial College, London. Honorary professor, Cambridge University; fellow of the Royal Society. Awarded KBE in 1992 and made a life peer (crossbench) in 1999. Chaired the Lords science and technology select committee. Retired from Shell in 2005.

Data gathering
Carried out interview on the 21st June 2006 in the House of Lords: recorded and transcribed in full. Length approximately 45 minutes. Talked about differences between Shell and other oil companies, his views on Shell's corporate culture, and differences between Europe and America. Also spoke of Brent Spa, and Nigeria where he personally spent time. Discussed inertia encountered when bringing about change in a large multinational company.

David Hone

Position
Chief climate change advisor at Shell

Biography
Chemical engineer by profession, at time of interview had been at Shell for 26 years. Started as a refinery engineer, and then spent about 10 years doing crude oil training and shipping before moving into current job.

Data gathering
Carried out interview on the 26th June 2006 by telephone: recorded and transcribed in full. Length approximately 30 minutes. Discussed the way the developing debate over climate change had influenced Shell's internal decision making. Talked about decision making structures and processes and the roles played by key individuals.