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Quality of Environmental Disclosure by Multi-National Oil Companies: A Corporate Governance Perspective

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ABSTRACT

Over the past few years, concern about the issue of environmental sustainability has increased considerably. Closely linked to this concern is the growing disquiet over the increasing pervasiveness of multi-national companies, especially oil companies, in shaping global politics and economics. Consequently, increased awareness about the environment has led to calls for better management of global resources and for ways in which to make the corporations that benefit the most from the exploitation of these resources, more socially accountable and environmentally responsible.

The oil industry continues to be at the centre of this debate. Despite the industry's immense contributions to society, it is regarded as a multi-national company with a questionable record of environmental sustainability practices and a low level of accountability and transparency. In an attempt to respond to these criticisms, oil companies are now producing corporate social responsibility (CSR) reports; voluntary reports containing disclosure about their social and environmental sustainability activities.

Against a theoretical background in which reasons were adduced to explain the motivation for the voluntary corporate disclosure phenomenon and a discussion of the oil industry's pivotal role in the environmental sustainability debate, this dissertation evaluated the quality of the environmental CSR disclosure contained in the annual report of thirty-four multinational oil companies. The evaluation was benchmarked against the environmental reporting requirements of the Global Reporting Initiative (GRI), the only internationally recognised CSR reporting standards. In addition, using regression analysis, this dissertation considered the impact of selected corporate characteristics on the quality of individual corporate environmental report. Finally, the dissertation looked at the corporate governance implications of the quality of the industry's environmental reporting.

The results obtained from the above tests showed a poor quality of environmental reporting, with only two of the six corporate characteristics having any impact on the quality of the sampled oil companies' environmental reports.

Dedicated to the memory of a loving and indulgent great aunt,

Madam Joanna Abeo Assumpçao (RIP)

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Chapter 1
INTRODUCTION

The oil industry

In a report by the Ethical Consumer Research Association, the oil industry was described as 'one of the world's least ethical industries', presumably because of its reputation as the multi-national industry with the greatest singular impact on the environment. Its main activity is the exploitation of crude oil, a non-renewable fossil fuel which is converted into non-biodegradable products like petrol, plastics, chemical products, and pesticides, all of which are regarded as harmful to the environment. The industry's activities underpin technological development and modern lifestyle and its impact is projected to increase over the next two decades. However, demand appears to be growing at a faster rate than the projected supply which, given the non-renewable nature of fossil fuels, could lead to major energy problems in the future. According to the official energy statistics of the U.S. Government, the industry has provided a constant rate of worldwide employment to about 1 million people since the 1980s. The statistics note that global demand for oil in 2002 was four times the quantity of newly found oil because the rate of discovery of worldwide oil reserves has slowed to a trickle (in 2000, there were 16 large discoveries of oil, eight in 2001, three in 2002, and none in 2003). Furthermore, the world has used up about 23 percent of its total known available petroleum resource, with total world oil production reaching 68 million barrels per day in 2003 (66.7 million barrels per day in 2001) against total estimated reserves of 1.266 trillion. By 2025, the world demand for oil is predicted to reach 119 million barrels per day, with huge demand increases in China, India, and other developing nations.

Oil industry failures

The Exxon Valdez accident in 1989 catapulted the oil industry onto the centrestage of global media spotlight where it continues to suffer much criticism for its on-going contribution to environmental risks and the resultant human health hazards; and for its perceived failure, generally, to promote sustainable environmental development. Examples of such failures include:

- Shell: environmental pollution and social problems in Nigeria, and its attempt to dump its Brent Spar oil storage platform in a deep water trench;
- BP: in February 1991, one of its chartered oil tankers spilled 300,000 gallons of oil along the California coast, adversely affecting the eco-system of Huntingdon beach;
- Texaco: the damage to the Ecuadorian rainforest eco-system and its indigenous peoples as a result of Texaco's operations in the region. The company is blamed for spilling more than seventeen million gallons of crude oil and for discharging more than twenty billion gallons of wastewater containing hydrocarbons, and other toxic wastes, in the area. Texaco has also been blamed for polluting the Amazon River, and for the resulting health problems afflicting the indigenous people who depend on the river for their livelihood.

Implications of the industry's failures

As a result of such failures and of the ensuing negative stakeholder perceptions, legitimacy theory suggests that the oil industry needs to display a strong degree of responsiveness to stakeholder concerns in order to safeguard its position and protect its long-term viability. Such legitimising behaviour may include improved and more acceptable environmentally friendly activities as well as effective corporate communication, particularly in the form of voluntary and statutory disclosure. The global importance of the industry's operations, coupled with its impact on human health and on environmental sustainability makes it the ideal industry to study in terms of the quality of its CSR environmental disclosure.

Voluntary corporate disclosure

The phenomenon of corporate social responsibility (CSR) reporting constitutes voluntary disclosure by management, of information about a company's social and environmental performance. The fact that some of this information is of a sensitive nature has prompted a lot of research into management's motivation for voluntarily making such information public (Deegan, 2002), with most of the research leaning towards the systems or social oriented theories (Gray *et al*, 1996) as an explanation for managements' motivation in this regard. The two theories that have been informing this debate the most, and which are regarded as stemming from the political economy theory (Gray *et al*, 1995), are the

stakeholder theory (Ullman, 1985; and Roberts, 1992) and the legitimacy theory (Dowling and Pfeffer, 1975; Patten, 1992; and Lindblom, 1994). According to Gray *et al* (1996), 'a systems oriented theory focuses on the role of information and disclosure in the relationship between organisations, the state, individuals, and groups', advancing the notion that an organisation is influenced by, and influences the society in which it operates. Since most of the current studies in this field incline towards validating this statement, it provides an accepted explanation of why the various types of corporate disclosures (financial; social; environmental) have become an important means of influencing stakeholders who affect companies through their investment decisions; their buying powers as customers; the supply of labour; and through regulations and laws by governments and other regulators. In relying on the above theories as an explanation for the voluntary corporate disclosure phenomenon, this dissertation will seek to justify their relevance to the oil industry and test their degree of applicability to that industry based on the quality of its environmental reports.

Annual Reports

Disclosures contained in the annual reports to shareholders have been the focus of earlier studies by such researchers as Hogner (1982) and Guthrie & Parker (1989). In western free market economies, the annual report is one of the most important media through which companies communicate with the outside world,[1] a fact that can be ascribed to the management structure of public companies. Underpinning this structure is the agency / managerial conflict, the result of a distinction between the ownership and management of publicly quoted companies whose shares are traded on a stock exchange (Berle & Means, 1932; Jensen & Meckling, 1976). Parkinson (1993) regards the distinction as one that transfers the company's affairs into the hands of qualified individuals who are equipped with the requisite abilities and skills for effective corporate management. The agency / managerial conflict has resulted in a multi-dimensional level of accountability; firstly by the board of directors and management to the shareholders / owners; and secondly, by a public company, to society in the various roles of investor, customer, employee, and lender of capital. Thus, by being the principal means

[1] Other corporate media of communication include: advertising; website; other corporate disclosures such as stand alone social/environmental reports; event sponsorships.

through which companies disseminate corporate information, the annual report has become the yardstick for measuring corporate transparency and accountability; providing assurance of financial stewardship to the owners / shareholders; and providing the financial market and investors with a recognised basis for appraising its performance.

Annual reports and audits

Over the years, the traditional *raison d'être* of a company, which was the maximisation of shareholder wealth, has been enhanced by the fact that the financial statements contained within the annual report have been, and continue to be, subjected to the audit process. An audit primarily involves an independent review of a company's financial performance, and a check for consistency of disclosure in all its different sections (Neu *et al*, 1998). Since corporate management is directly responsible for the disclosures contained in the annual report, the environmental reports contained therein or attached thereto, may be regarded as approximating a true reflection of corporate management intentions and are therefore a sound basis for determining the quality of responsiveness of oil companies to stakeholder concerns (i.e. legitimacy theory). The foregoing seeks to rationalise the choice of annual reports as the basis for evaluating corporate environmental disclosure.

Global Reporting Initiative (GRI)

GRI is an independent external reporting framework that enables organisations to communicate actions taken to improve economic, environmental, and social performance; as well as the outcomes of such actions, and future strategies for improvement. Though the guidelines do not govern an organisation's behaviour, they help an organisation describe the outcome of adopting and applying codes, policies, and management systems.

Establishment of GRI

The initiative, which was convened in 1997 by the Coalition for Environmentally Responsible Economies (CERES) in partnership with the United Nations Environment Programme (UNEP), was established to elevate sustainability reporting practices to a level equivalent to those of financial reporting

(International Accounting and Auditing standards), while achieving comparability, credibility, rigour, timeliness, and verifiability of reported information. It carries out its work with the active participation of corporations, environmental and social NGOs, accountancy organisations, trade unions, investors, and other stakeholders worldwide; and encourages 'organisations of all sizes and types, operating in any location' to adopt the guidelines as the benchmark for their CSR reporting. Therefore, where an oil company is subject to more than one jurisdiction e.g. Royal Dutch/Shell group (see below), or operates in different jurisdictions with dissimilar reporting requirements, the GRI principles provide the requisite uniformity in reporting standards which will facilitate intra- / inter-company comparisons of environmental reporting.

Being the only internationally recognised CSR reporting standards and guidelines, it currently provides the much needed uniformity in environmental reporting akin to that provided by the international accounting and auditing standards. On this basis, the decision to benchmark the quality of oil company environmental reporting against the GRI standards may be justified.

Aims and Objectives

The primary aim of this research is to qualitatively evaluate the level of environmental CSR disclosure within the oil industry by assessing the extent to which the annual environmental reports of the sampled oil companies reflect the principles of the GRI standards. A secondary aim is to consider the impact, if any, of selected corporate characteristics on the quality of individual corporate environmental report.

These objectives will be achieved by exploring the more acknowledged theories that seek to explain management's motives for the voluntary corporate disclosures contained in annual reports. Further, the pivotal role of multinational oil companies in the environmental debate provides justification for evaluating the quality of their environmental reports. Thirdly, as the only currently recognised international CSR reporting benchmark, the GRI standards, which have been described as 'essential to producing a balanced and reasonable report on an organisation's environmental performance', should provide the most objective

basis for this evaluation and comparison. Therefore, the environmental reports of the sampled oil companies will be evaluated against the requirements of the GRI environmental reporting standards.

This dissertation does not aim to provide a critique of the facts, theories, and issues explored therein, beyond recognising their advantages and disadvantages in terms of relevance and applicability to the subject of environmental reporting by oil companies, and to the industry's pivotal role in the environmental sustainability debate. To undertake such a critique would occasion the use of methodology that is beyond the scope of this work.

Justification

Although there have been numerous studies on voluntary corporate disclosures in annual reports and some have focused on oil companies and industry, there is very little research exclusively on the extent to which oil industry environmental reports reflect the requirements of the GRI reporting guidelines. By carrying out such an evaluation, and by exploring how specific corporate characteristics impact the quality of individual oil company environmental report, it is the opinion of the author that, given the topical nature of, and global concern over, the issue of environmental sustainability, this dissertation will further inform this debate.

Outline of the dissertation

The rest of this study is divided into five chapters as follows:

Chapter two establishes a theoretical context for this dissertation by reviewing current research in the area of systems or social oriented theories as a basis for understanding management's motives for making voluntary corporate disclosure. Chapter three explores the on-going debate about oil companies and their environmental impact by discussing the global role and influence of the industry and detailing some of the environmental and health risks attributed to it. Chapter four discusses the research methodology; the matrix approach to evaluating the environmental reports; the statistical analyses models; and the choice of corporate characteristics. It also discusses the limitations of the research approach. Chapter five analyses and discusses the results, before examining what it all means from a

corporate governance perspective. The conclusion and recommendations may be found in chapter six.

Chapter 2
THEORETICAL FRAMEWORK

Overview

The theoretical framework for this dissertation is based on a review of the current literature on systems / social oriented theories. Specifically, chapter two will review the two more acknowledged explanations for voluntary corporate disclosure, namely the stakeholder and the legitimacy theories. The aim is to establish a theoretical rationale for management's motives in making voluntary corporate disclosure and thereby provide a theoretical context for the review of environmental disclosure within the corporate annual reports of oil companies.

Reasons for corporate disclosure

Numerous reasons have been adduced to explain the voluntary corporate disclosure phenomenon, including a desire to comply with borrowing requirements, attract capital and investors, and the desire to comply with legal requirements (Deegan *et al*, 2000); Other reasons include an awareness of the economic advantages of 'doing the right thing' (Friedman, 1962); management belief in being accountable which imposes a responsibility to communicate corporate information (Hasnas, 1998 and Donaldson & Preston, 1995); attempts to forestall the introduction of onerous or unfavourable laws / regulations (Deegan and Blomquist, 2001); desire to win particular reporting awards (Deegan and Carrol, 1993); the need to respond to perceived threats to the company's legitimacy (Deegan *et al*, 2000, 2002; Patten, 1992); and the management of powerful stakeholder groups (Ullman, 1985; Roberts, 1992; Neu *et al*, 1998). Researching the relationship between social disclosure, public pressure, and profitability measures, Patten (1991) concluded that social disclosures were more related to public pressure and were used to address the environmental risk exposure faced by companies. Following the Exxon Valdez oil spill in 1989, Patten (1992) examined the spill's effects on the environmental disclosures in the annual reports of companies within the oil industry other than Exxon, in an attempt to explain how external events influence the corporate social disclosure made by companies. He observed a significant increase in environmental disclosure within the oil industry following the spill. Patten's findings imply that

corporations react to external stimuli; in this case, a direct reaction on the part of oil companies to global stakeholder concern over a major oil spill. The reasons for such reactions are explained by the social / systems oriented theories.

Social / Systems Oriented theories

Denoted in the notion of a social contract (Shocker and Sethi, 1973; Mathews, 1993)[2], systems oriented or social theories provide a useful framework for investigating corporate social behaviour particularly the motives behind voluntary corporate social disclosure. These theories hypothesise that an organisation is influenced by, and influences, the society in which it operates. As mentioned in chapter one, the most acknowledged perspectives of the social theories are drawn from stakeholder theory (Clarkson, 1995; Mitchell *et al.*, 1997; Roberts, 1992), and legitimacy theory (Guthrie and Parker, 1989; Mathews, 1993; Patten, 1992; Sutton, 1993); both are based on the concept of the political economy which is defined by Gray *et al* (1996) as 'the social, political, and economic framework within which human life takes place'.

Political economy theory

There are two schools of thought under the political economy theory. The classical school is based on Marxian principles while the bourgeois school tends to be associated with John Stuart Mills. In general, both schools posit that economic activities take place within a socio-political, institutional framework; thus lending more weight to the 'triple bottom line' contention of Elkington (1997) than to the traditional solely financial basis of measuring economic performance (Gray *et al*, 1995). (Also, see organisational legitimacy, below).

[2] Mathews (1993, p. 26) defines a 'social contract' thus:
"The social contract would exist between corporations (usually limited companies) and individual members of society. Society (as a collection of individuals) provides corporations with their legal standing and attributes and the authority to own and use natural resources and to hire employees. Organisations draw on community resources and output both goods and services and waste products to the general environment. The organisation has no inherent rights to these benefits and in order to allow their existence, society would expect the benefits to exceed the costs to society"; According to Shocker and Sethi (1973) 'a social contract imposes a moral obligation on companies to act in a socially responsible way'.

Stakeholder theory

Freeman (1984) and Gray *et al* (1996) define a stakeholder as any human agency that can be influenced by, or can itself influence the activities of an organisation. To Ullman (1985), the stakeholder theory is a systems-oriented theory which recognises the dynamic and complex nature of the relationship between the company and its environment; providing a justification for incorporating strategic decision making into the field of corporate social responsibility. His work is based on that of Dierkes & Antal (1985) who claim that publicly disclosed CSR information provides a basis for dialogue with various stakeholder groups. Stakeholder theory suggests that by voluntarily making corporate disclosure, management is responding to the concerns of, and seeking to influence its stakeholders (McGuire *et al*, 1988). Ansoff (1965) linked stakeholder theory to corporate objectives by describing same as the ability to balance the conflicting demands of the various corporate stakeholders. In order to achieve the strategic objectives of the firm, Freeman (1983) defines one of corporate management's main roles as assessing the importance of meeting stakeholder demands, saying that the more stakeholder power increases, the greater the importance of meeting their demands. He classified the stakeholder concept into two models: a corporate planning and business policy model; and a corporate social responsibility model. These models further illustrate just how all encompassing the definition of stakeholders can be.

Corporate Planning and Business Policy model

In Freeman's corporate planning and business policy model, the term 'stakeholders' refers to customers, owners, investors, suppliers, and the general public, whose support for, and approval of, corporate policies are necessary for the corporation's continued existence. The model focuses on the importance of gaining such support and approval by recognising that the behaviour of the various stakeholder groups could be a limitation to management's efforts to optimise corporate resources within its operational environment.

Corporate Social Responsibility model

Freeman's corporate social responsibility model recognises the importance of external groups which may be antagonistic towards the corporation such as

regulatory or special interest groups like Friends of the Earth, and Greenpeace. Thus, the model acknowledges that strategic planning must adapt to changes in the social demands of these non-traditional external power groups.

Conflicting Stakeholder Interests

Sturdivant (1979), showed that the interests of the different stakeholders conflicted by comparing the attitude towards social responsibility of managers and activist group leaders. Because activists demonstrated a higher belief in a company's mandate for social responsibility, he concluded that managers need to consider conflicting stakeholder interests in developing strategic corporate plans. Citing a *Fortune* magazine survey on stakeholder satisfaction, Chakravarthy (1986) argued that companies can attain an excellent strategic performance if they adopt the underlying belief that co-operation with their different stakeholders is fundamental for their success. In discussing the role of stakeholders other than investors and managers in the development of corporate financial policy, Cornell & Shapiro (1987) state that a company must respect the 'implicit claims' made to those stakeholders in developing its capital structure strategy. To the extent that these implicit claims e.g. uninterrupted service to customers, are inseparable from the company's operations, they have an impact on its total risk. An empirical test carried out by Barton *et al* (1989) provided evidence to support Cornell & Shapiro's argument. Based on the foregoing research, and on the other studies he reviewed, Roberts (1992) cites them as conclusive proof that stakeholder theory is a viable approach to predicting and explaining management behaviour. His empirical research into the ability of stakeholder theory to explain the CSR disclosure phenomenon found that measures of stakeholder power, strategic posture, and economic performance are highly related to levels of CSR disclosure.

Regulatory and external risks

To support their position that companies employ social responsibility activities as a way of reducing the risk of adverse governmental regulations on corporate value, Watts & Zimmerman (1978) developed a political costs hypothesis, which together with the stakeholder theory recognise that government can have an impact on corporate strategy and performance and that CSR disclosure policies constitute a means of satisfying government demands. This implies that

governments qualify to be recognised as stakeholders too, being able to impact corporate behaviour by introducing new and onerous regulations and laws such as the UK's combined code and the US's Sarbanes Oxley code of corporate governance best practice. Other forms of external intervention include civil protests such as organised boycotts of company products and services; and the loss of shareholder value as indicated by the findings of a survey carried out by World Resources Institute[3] that some oil and gas companies could lose up to 6 per cent of their shareholder value as a result of environmental risks[4].

If, as the preceding discussion suggests, stakeholders are able to affect corporate behaviour in this manner, management will respond by embracing strategies to effectively respond to such external, and possibly adverse, stimulus (Preston & Post, 1975). From a corporate perspective, such action would amount to legitimising behaviour aimed at favourably influencing stakeholder opinion.

Stakeholder management or manipulation?

Unsurprisingly, Dowling & Pfeffer (1975) regard communication as a medium through which the company attempts to either alter the definition of social legitimacy so it conforms to the organisation's current practices, outputs and values; or through which it attempts to become identified with symbols, values, or institutions with a strong base of social legitimacy. This means that management is able to use the corporate disclosure avenue, either to manipulate stakeholders and avoid or limit their opposition or disapproval; or to manage stakeholders and gain their support and approval. Managing stakeholders involves accountability through communicating the company's compliance with societal norms and values. Conversely, manipulating them involves employing 'good news' strategy,

[3] a think tank focused on the links between environmental and financial performance, with backing from Friends Ivory & Sime, a UK fund manager

[4] According to the survey, Occidental, Repsol and Unocal were most vulnerable to prospective actions to curb climate change and growing constraints on access to energy reserves in environmentally sensitive areas, while Burlington, Valero and Sunoco were relatively insulated against environmental pressures. Of the 16 companies surveyed, Apache, Chevron-Texaco, ConocoPhillips, TotalFinaElf, Repsol, Occidental and Unocal have a larger-than-average share of upstream reserves in environmentally important areas. However, Burlington, Eni, ExxonMobil and Royal Dutch Shell have relatively little exposure to such sensitive sites. Enterprise, recently acquired by Royal Dutch/Shell, has none of its reserves lying in these areas. (***Environmental risk to oil units by Tony Tassell, The Financial Times, July 24, 2002 p28***).

championing the positive and concealing negative news about corporate operations that contravene societal norms. The most common medium of corporate communication with stakeholders and society in general is via the annual reports and related corporate filings. Thus, the environmental disclosure within the annual report, similar to the financial information contained therein, has become a significant medium for the dissemination of relevant corporate information.

Corporate Disclosure

Corporate disclosure may therefore be defined as a management strategy for aligning corporate objectives with society's expectations and values. To its stakeholders', corporate disclosure provides corroboration, or otherwise, of societal observations and perceptions about corporate performance i.e. it provides a means of gauging the existence and level of transparency and accountability in communication between a company and its stakeholders. Corroboration will earn the company the social legitimacy it requires to operate, possibly leading to higher market value, profits, and stronger competitive position. A lack of corroboration poses a threat to the company's continued existence; to which management will respond with 'damage control' strategies that may include information disclosure, advertising, and lobbying. In recognising the diversity in the make-up of a company's stakeholders, Oliver (1991) asserts that corporate reactions to the demands of external stakeholders are shaped by the number, amount of influence, and the convergence or divergence of interest of these stakeholders, while Lindblom (1994) uses the term 'relevant publics' to acknowledge that only a portion of those diverse stakeholders will have the power to directly affect corporate strategies. As such, disclosure should be aimed, primarily, at these relevant publics.

The on-going environmental sustainability initiatives within the oil industry may be deemed a direct reaction to global stakeholder concerns about the industry's perceived culpability for environmental pollution, abuse, and the resulting human health hazards as borne out by the following statement from the BP 2003 Sustainability Report:

"This year**, in response to external feedback**, we have produced an integrated report that explains the relationship between environmental, social and ethical issues and our business strategy, including many factors relevant to the long-term future of the group. We have therefore given it a new title: BP Sustainability Report 2003"
(emphasis by author).

By thus responding to stakeholder concerns, oil companies are attempting to win over or to manipulate stakeholders by displaying legitimising behaviour which not only enhances the industry's long term survival, but should also boost each oil company's financial viability in the long run.

Limitations of Stakeholder theory

According to Roberts (1992), although recent studies have established stakeholder influence on corporate decision making, there has been no research to test the level of stakeholder influence on the CSR activity. Also, because of the wide definition of the term, stakeholder, a company may, at any point in time, be unable to ascertain who all its stakeholders, or relevant publics, are with any degree of accuracy. Consequently, it may be unable to respond to their concern as argued by the theory.

Legitimacy theory

Relying upon the notion of a social contract, Legitimacy theory 'appears to be the theoretical basis most frequently used in attempts to explain corporate social and environmental disclosure policies' (Deegan *et al*, 2002). According to Preston & Post (1975), corporate disclosures are made both in response to external events and in order to ensure corporate survival. Because corporate legitimacy was traditionally measured by the financial constraints that society imposed on a company, the classical economic model defined legitimacy as being market based (Abbot and Monsen, 1979; and Friedman, 1962) i.e. because the company's primary objective is profit maximisation, competitive market forces constitute a form of social control to which the company must respond, if it is to achieve its profit maximisation objective and maintain its legitimacy. Now, legitimacy is being redefined to include considerations based on corporate social and

environmental performance (Shocker & Sethi, 1973; Preston & Post, 1975; Patten, 1992).

Organisational Legitimacy

There are two approaches to legitimacy theory. The one focuses on the legitimacy of individual organisations e.g. Exxon's reaction to the Valdez oil spill; and the other, based on Marxian principles, focuses on the legitimacy of the system in its entirety e.g. justifying the existence of a socially unacceptable company, for example a cigarette manufacturing company, on the basis that it creates employment. Legitimacy theory is founded on the concept of organisational legitimacy which according to Dowling and Pfeffer (1975) exists when there is 'congruence between an entity's value system and that of the society in which it operates'. It promotes corporate viability by ensuring the necessary availability of capital, labour, and customers (Pfeffer & Salancik, 1978; Singh *et al*, 1986), whilst mitigating against possible threats such as government regulatory intervention that may otherwise arise (Watts & Zimmerman, 1978, 1986) and against disruptive actions by discontented external stakeholders (Elsbach, 1994). In other words, Dowling and Pfeffer (1975) consider legitimacy to be a resource on which an organisation depends for its long term viability. Hence, management strategies will consist of policies to positively influence or manipulate this resource to the organisation's benefit. A lack of congruence, referred to as a 'legitimacy gap', between the two value systems amounts to a threat to the entity's legitimacy and management may respond, for instance, by lobbying, advertising, or by voluntarily disclosing corporate information.

Legitimacy gap

According to Wartick and Mahon (1994), a legitimacy gap arises when either society's expectations of corporate activities change but corporate activities remain the same and vice-versa, or when there is a change in both, either in different directions or in the same direction but with a time lag. It is argued that reactions to perceived gaps in legitimacy will depend on management's perception of the level of acceptability that society accords its activities. A high level of acceptability represents a low threat while a low level of acceptability represents a high threat. Thus, different situations will constitute a legitimacy gap to different

managers, and their response to a perceived corporate threat will vary accordingly. This accords with Suchman's (1995) argument that an organisation's choice of legitimation and public disclosure tactics will depend on whether it is seeking to gain, maintain, or repair legitimacy.

Gaining, maintaining and repairing legitimacy

Gaining legitimacy may involve corporate attempts to overcome its 'liability of newness' (Ashforth and Gibbs, 1990) such as when breaking into new business areas. Information disseminated by management must be favourable and controlled, done pro-actively, and in direct response to identified threats, instead of a crisis situation. Thus, in an attempt to gain legitimacy for its increased investment in gas exploration, the oil industry disseminates information about the 'cleaner and more efficient' qualities of using gas as fuel. A company wishing to maintain legitimacy must first identify the stakeholder group(s) that is affected by a situation. It would then employ tactics, such as voluntary environmental CSR reporting, which are aimed at influencing these 'conferring publics' (O'Donovan, 2000). The decision by oil companies to annually make voluntary environmental disclosure may be regarded as the industry's attempt to maintain its legitimacy in the face of mounting global stakeholder concern over lapses in its environmental sustainability practices. On the other hand, repairing legitimacy usually involves reacting to a crisis (damage control), or acting to pre-empt one (damage prevention or mitigation). The oil industry's reaction to oil spills constitutes an attempt to repair its tarnished legitimacy.

Change in societal norms

Organisational legitimisation may also come about as a result of changes in societal norms and values. For instance, since smoking was identified as a possible cause of lung cancer, this terminal illness has become associated with cigarette manufacturers whose operations have been, and continue to be subject to a legitimacy threat in the form of stricter government regulations, and numerous multi-million dollar law suits, particularly in the US. Similarly, the oil industry responded to the legitimacy threat arising from greater awareness about the dangers of greenhouse gas emissions and increased environmental regulations, by introducing innovations such as the use of unleaded fuels in cars, on-going

research into use of alternative sources of energy, and the manufacture of more fuel efficient vehicles.

Influencing Legitimacy

Although legitimacy is conferred on a company by external bodies, the company is also in a position to influence the process (Buhr, 1998; Dowling and Pfeffer, 1975; Elsbach and Sutton 1992; Woodward *et al* 1996). This is the 'political economy of accounting view' (Woodward *et al*, 2001) which suggests a more proactive corporate behaviour where management attempts 'to set the agenda' by manipulating stakeholder views to management's advantage. 'Advocacy advertising' is a good example of corporate attempt at influencing the legitimacy process. It involves a biased disclosure in the company's favour. For example, an advertisement about the advantages of using pesticides in farming which is silent about its possible dangers; simply depicting them as useful in producing crops that are more resistant to farming hazards, thereby ensuring bumper harvests and lower cost to the consumer. This strategy was employed by US oil companies in the 1970s, in reaction to the rising negative public perceptions due to the 1973 oil crisis. In this instance, US oil companies used an editorial style method to deliberately present, as an objective point of view, a message that was biased in their favour. Couching advertisements in traditional American values, the oil companies presented their position in such a way that they were able to limit the extent of public dissention i.e. objections to the advertisements appeared to be an attack on traditional American values and stakeholder objections were thus controlled.

The foregoing suggests that corporate quest for long-term financial viability will cause them to react to any external stimuli that threaten the attainment of this goal. Such reaction constitutes legitimacy behaviour and may involve a recognised strategy such as voluntary corporate disclosure in annual and other forms of corporate reports. Other forms of legitimising strategy include advertising, lobbying, and event sponsorship.

Limitations of Legitimacy theory

The main limitation is the insinuation that information disclosure is reactive and not pro-active i.e. a company releases information in response to negative perceptions about its activities and not out of an obligation to inform its stakeholders. By so doing, management falls short of true transparency and accountability. As a result, legitimacy theory implies that organisations with a negative impact on society may be able to continue in operation if their communication or disclosure strategy is successful enough that it is able to sway public opinion in their favour. Another limitation is the difficulty in predicting managerial response, and the form and extent of it, to a legitimacy threat (Deegan, 2002). Furthermore, it is unclear how managers become aware of the social contract and community concerns although this may be shaped by the media agenda.

Media agenda

In spite of the popularity of the above theories, the extent of their relevance in explaining the voluntary corporate disclosure phenomenon may depend, indirectly, on the media agenda. As stated by Brown and Deegan (1998), media agenda setting theory advances the notion of a relationship between the relative emphasis given by the media to various issues and the degree of salience of these issues to the general public. In other words, the media are not seen as reflecting public opinion, but rather, as shaping them. In relation to oil companies, global stakeholders generally become aware of an oil spill and attendant environmental issues through media reports. It is the vividness and intensity of reporting that shapes stakeholder reactions (Deegan *et al*, 2002) and indirectly determines the extent of legitimising required on the part of the company.

Commentary

Recognition of the growing capability of the public at large to engender corporate change is manifested in management's concern about negative public perception. Such negativity has implications for the company's reputation, stock value, attractiveness to investors, and ease of access to credit facilities and may arise from a change in society's values e.g. the growing anti-smoking crusade. Or, it may arise from the negative perception attributed to a company's operations e.g.

the perceived environmental risks associated with oil exploration and production. The argument that corporate existence is dependent on society's willingness to allow it to continue to operate (Reich, 1998) supports the notion of a social contract between society and corporations (Shocker and Sethi, 1973; Mathews, 1993). Therefore, response to society's concerns, which are seen as a threat to the company's survival, will encompass legitimation strategies to change those perceptions into positive ones e.g. lobbying, advertising, and voluntary environmental disclosures. Of course, management may also be motivated to voluntarily disclose environmental information in its annual report based on a genuine desire to be accountable to its stakeholders whom it regards as having a 'right to know'[5]. In the former case, disclosure will have a positive spin as the emphasis is on manipulating stakeholder opinion by portraying the company in a good light. In other words, such reactive disclosure will be more of a public relations exercise and disclosure will be symbolic, probably nominal and of limited actual information value (see chapter 3). One can argue that such companies are not demonstrating true corporate accountability (Deegan *et al*, 2002). Conversely, if disclosure is motivated by a desire to be accountable, it should contain substantive, pro-active disclosure that enhances corporate transparency (Woodward *et al*, 2001).

Summary

Similar to stakeholder theory, legitimacy theory also recognises corporate reaction to external stimuli. While the stakeholder theory focuses on the driving force behind the stimuli, legitimacy theory is more interested in the response to the stimuli and the media employed, or actions taken, in responding to them. It is this action that constitutes legitimacy behaviour and it could take the form of voluntary corporate disclosure, which the stakeholder theory also regards as an important means of corporate communication with its stakeholders. This chapter has attempted to provide a theoretical explanation for why companies make voluntary disclosure, in order to validate the importance of annual reports and to justify reliance on this medium of corporate communication in this dissertation. The next chapter will discuss the central role of the oil industry in the

[5] Accountability theory argues that stakeholders have a right to request information (Gray *et al*, 1995)

environmental sustainability debate in order to show how the theories discussed in this chapter apply to oil companies and why the quality of their environmental reports are significant.

Chapter 3

OIL COMPANIES AND THE ENVIRONMENTAL DEBATE

Overview

Chapter three extends the literature review by exploring the on-going debate about oil companies and their environmental impact. Since the Exxon Valdez accident, the issue of the oil industry's corporate environmental responsibility has gained worldwide importance (Patten, 1992). There is increasing evidence that the industry's operations, and the end-products from the use of energy generating goods such as petrol, are harmful to the environment and to human beings. This chapter discusses the growth of the oil industry as a global industry; the impact of oil companies as multi-national or trans-national (TNC) companies; the industry's impact on environmental risk and non-sustainable development; and how societal reaction to these dangers is shaping the industry's corporate disclosure strategy; all important factors in understanding why the industry is regarded as the principal player in the global environmental sustainability debate.

A global oil industry

OECD[6] defines globalisation as a process whereby trade and investment activities are carried on internationally across national borders and boundaries, as opposed to nationally or locally. The trend towards globalisation intensified in the 1990s particularly because of the liberalisation of international trade regimes (e.g. GATT, WTO)[7], the deregulation of financial markets, and the rapid changes in information, communication, and transportation technologies. Although it can lead to efficiencies in the allocation and use of natural resources as well as contribute to income growth and to a higher standard of living, globalisation has largely been blamed for the environmental damage arising from the ensuing growth in modern economic activities.

[6] OECD = Organisation Economic Co-operation and Development. It is a group of 30 member countries sharing a commitment to democratic government and the market economy.
[7] GATT = General Agreement on Tariffs and Trade; WTO = World Trade Organisation

Demand for Energy

Globalisation has also been blamed for fuelling the current high and increasing energy demand for heating and electricity, transportation, and for manufacturing and production purposes; a need that has led to a corresponding increase in demand for the raw materials (mainly crude oil, coal, natural gas, trees, and nuclear power) from which energy is generated. Although most of the world's oil and natural gas resources are found in developing countries like Nigeria and Saudi Arabia (Radler, 2003), much of the financial and technological resources needed to develop the global oil reserves belong to the western oil companies[8] of North America and Europe. Consequently, oil economics and politics have acquired global importance to the extent that many experts suspect that oil was one of the main reasons for the US led invasion of Iraq[9].

Impact of multi-national oil companies

The emergence of oil companies as multi-nationals has made them a power-base in global economics and international trade, exerting an indisputable level of control over governments, and human decisions and lifestyles through their exploitation of crude oil reserves and their control of the global oil market. This is achieved directly through the nature of their operations (prospecting, drilling, and transporting of crude oil) and indirectly through marketing of the industry's end products (petrol, pesticides, chemicals, and diesel). By directly exploring and drilling for oil, refining and processing it, and finally selling it at a petrol station, most of the multinational oil companies are 'fully integrated' companies showing 'a high degree of vertical integration by controlling their sources of supply at one end and the chain of distribution at the other end' (Parkinson, 1993).

[8] 'Shell Withheld Reserves Data to Aid Nigeria' by *Jeff Gerth and Stephen Labaton, New York Times, March 19, 2004*

[9] Iraq accounts for 15 per cent of the world's proven oil reserves (see Table 1). Most of the country's acreage is unexplored, with only 2,000 wells drilled compared with 1m in similarly-sized Texas. With lifting costs at about Dollars 1 a barrel, Iraq is one of the world's lowest-cost producers (*Petrel pushes for a slice of Iraq's oil action by Joanna Chung, The Financial Times, December 29, 2003 p19*)

Residence and Jurisdiction issue

The global nature of oil industry operations transcends national borders. As a result of elaborate and complicated corporate structures, and varied corporate activities that are sometimes quite distinct, it can be difficult to determine the jurisdiction that has overriding and ultimate ownership of all the operatives within a particular oil company, and by implication, the legal framework under which these operatives may be brought to book. For instance, following the Sea Empress oil spill in Milford Haven, the Independent Newspaper (February 22, 1996), speculating on who was to blame for the spill, carried on page 1, the following headline about the ownership of the Sea Empress and its cargo:

"But who takes the blame? Built in Spain; owned by a Norwegian; registered in Cyprus; managed from Glasgow; chartered by the French; crewed by Russians; flying a Liberian flag; carrying an American cargo; and pouring oil on to the Welsh coast"

Another example is the Royal Dutch/Shell group structure which is in the process of being normalised by consolidation into one structure[10]. Currently, the company's unusual, bi-national structure is made up of two parent companies, each with a distinct management board. Royal Dutch Petroleum Co. of the Netherlands controls 60 percent of the group and Britain's Shell Transport & Trading Co. plc holds the remaining 40 percent stake. Group operations are carried on in more than 140 countries worldwide, as different and sometimes distinct commercial endeavours and legal personas. As a result of the above corporate structure, and of Shell's diverse global operations, stakeholders may have difficulty in ascertaining its jurisdiction of ultimate control. In the words of Parkinson (1993), 'though a parent company of a multi-national group be registered in a particular country in which the group has its headquarters, and where a majority of its shareholders are located, it is no longer appropriate to deem some multi-nationals as having any national loyalties'. As a consequence, multinational oil companies may be described as 'borderless corporate entities'.

[10] The new company will be called Royal Dutch Shell plc; it will be headquartered in the Netherlands, with a primary listing on the London Stock Exchange (Chartered Secretary, December 2004, page 8).

Oil industry and societal perception

The adverse media and negative public perception suffered by the oil industry has coalesced diverse groups of individuals and governments into forming environmental and sustainability pressure groups like Coalition for Environmentally Responsible Economies (CERES), Greenpeace, Friends of the Earth, and National Wildlife Federation. Using their power as relevant publics, these groups are responsible for orchestrating a change in the corporate objective; from the traditional shareholder investment maximisation goal to a more prescriptive one where companies are required to act ethically by broadening their main objective to include responsiveness to stakeholder concerns and recognition of stakeholder[11] interests and welfare. The above process has been made easier by the growth in the size of multi-national oil companies which has led to a dilution of their ownership. According to Keim (1978), the more distributed the ownership of a company, the broader the demands of these diverse owners. The implication is that corporate recognition of the interest of a wider stakeholder group amounts to an acknowledgement of the importance, not just of a company's financial performance, but also of its social, political, environmental, and other non-financial performance; an awareness that Elkington (1997) describes as 'the triple bottom line' reporting. The shortcoming of such a prescriptive approach is that it is unable to predict how, and the extent of managerial compliance, if any. By voluntarily taking on the additional responsibility for communicating their environmental and social performance to stakeholders, management has acquired complete editorial control over the contents of the reports and the manner of disclosure. To this extent, it is difficult to determine the motivation for reporting and the reliability of the reports, as management may use this important medium of corporate communication as a means of controlling societal perception by making symbolic disclosures (i.e. complying with the letter of the law) which are not substantive (i.e. non-compliance with the spirit of the law). By thus failing to properly inform and be accountable and transparent, management is employing a 'good news' disclosure strategy that turns the annual reports into a self-laudatory exercise (Deegan and Gordon, 1996; Deegan and Rankin, 1996).

[11] Stakeholders in this instance are not limited to investors and other providers of capital, but include governments, other regulators, customers, suppliers, employees, and others who are affected by a company's operations.

Environmental Risk

Environmental risk may be defined as anything that jeopardises the well being of the environment, arising either through air or water pollution and contamination; the uncontrolled mining or use of non-renewable natural resources; or as a result of the pursuance of processes or policies that do not promote sustainable environmental development. The oil industry's environmental risk impact pervades the whole of the industry's production processes, from the exploration stage, through the actual production stage to the effluent released from using the industry's end products. Exploration can involve deforestation, forcible relocation of people from their land, and pollution of waterways and fragile ecosystems with oil waste. Pipeline and tanker spills devastate wildlife and the environment, and the refining of crude oil itself is energy intensive and causes a high degree of pollution, mostly in the form of toxic emissions to the air. Similarly, using petrol and diesel produces carbon gases which are toxic, and contribute to the depletion of the ozone layer. The industry's environmental risk impact will be discussed in the context of three countries, namely Saudi Arabia which has the largest proven oil reserves in the world; Nigeria, which has the largest proven reserves in Africa, south of the Sahara (Radler, 2003), and Canada, which has the largest proved oil (conventional crude and oil sands) and gas reserves in the west (**Table 1**). It is envisaged that this approach will highlight the similarities in the environmental challenges faced by oil dependent economies whilst reiterating the global presence of the oil industry and its contributory responsibility for global environmental risks.

Saudi Arabia

Saudi Arabia is home to the largest oil reserves in the world. As at January 1, 2004, its total reserves represented twenty percent of the global total (i.e. reserves of 259,400,000 barrels compared with a global total of 1,265,811,583 barrels – Radler, 2003). Acknowledging that environmental protection issues in Saudi Arabia are linked to its main industry of oil production, the US's Energy Information Administration (EIA) concedes that environmental risks remain, despite the effect of technological advances in reducing their impact. Specifically, EIA admits that not only does the offshore drilling affect the integrity of the coastal shelf, but it also adversely affects marine life. The continuing threat to

Gulf ecology and environment is as a result of an increase in oil discharges into the Persian Gulf; and of the continuing risk of spillage from transporting oil to world markets via barges, super-tankers, or pipelines. EIA points out that pollution from offshore hydrocarbon development, and from the de-ballasting of oil tankers and other ships moving through the heavily trafficked Red Sea and Persian Gulf regions, poses a threat to the reefs located along the Saudi coast, even though a relative lack of precipitation, human population, inflow from rivers, and other natural disturbances are helping to keep the Red Sea reefs generally healthy. Reiterating the warning of environmentalists, the report recognises that offshore oil rigs contribute a significant percentage of oil spillage into the sea through seepages in the sea bed, cracks in rigs, illegal discharges by oil companies and vessels, and accidental oil spills. The EIA report further emphasised the warning by the Regional Organisation for the Protection of the Marine Environment, a leading Arab environmental organisation, that a September 1999 die-off of fish in the northern Gulf, due to high salt level in the water and 100-degree water temperatures, is the result of global warming compounded by indiscriminate dumping of wastewater in the region by oil companies, and the result of unchecked oil seepage.

Global warming

The United Nations Framework Convention on Climate Change (UNFCCC) defines global warming as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which, in addition to natural climate variability, is observed over comparable time periods." Global warming occurs as a result of 'greenhouse gas emissions' whereby the hydrocarbons that make up crude oil release poisonous gases,[12] (mainly carbon dioxide - CO_2) into the atmosphere during their conversion into energy, adversely affecting the atmospheric ozone layer, and causing an adverse change in atmospheric climatic conditions. Before the industrial revolution, US Environmental Protection Agency (EPA) claims that human activity released very

[12] Besides Carbon dioxide (CO_2), these include Nitrate oxides (NOx), Sulphur oxides (SOx), Carbon monoxide (CO), Methane (CH_4); very powerful greenhouse gases that are not naturally occurring include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6), which are generated in a variety of industrial processes. (source: US Environmental Protection Agency website)

few gases into the atmosphere, but now through population growth, fossil fuel burning, and deforestation, the mixture of gases in the atmosphere is being negatively affected. As recently as 1996, the US Inter-governmental Panel on Climate Change (IPCC) concluded that, "Human activities are changing the atmospheric concentrations and distributions of greenhouse gases". These changes produce a 'radiative forcing'[13] by changing either the reflection or absorption of solar radiation, or the emission and absorption of terrestrial radiation. In 2001, IPCC concluded that "concentrations of atmospheric greenhouse gases and their radiative forcing have continued to increase as a result of human activities".

Implications of global warming

According to the EPA, rising global temperatures are expected to trigger major environmental hazards such as changes in the level of global precipitation (flooding in some regions and drought in others); a rise in sea levels (due to a decline in snow cover and sea ice); changes to agricultural productivity, migratory patterns, and bio-diversity. The effects of global warming are clearly visible on the Indian Ocean Island of the Maldives, where the entire island capital of Malé is enclosed within sea walls to protect it from the impending hazards of a rise in sea levels attributable to the change in climatic temperatures. It is estimated that the whole of Malé will have disappeared below sea level in one hundred years' time, at the current rate of rise in environmental temperatures. Other areas affected by global warming include the Gobi desert in China and the Sahara desert in Africa which are fast encroaching on surrounding erstwhile fertile land. The global attempt to control green-house gas emissions gave birth to the Kyoto protocol i.e. the United Nations Framework Convention on Climate Change which was adopted in Kyoto, Japan, on 11 December 1997.

Kyoto Protocol

However, the Kyoto protocol has been strongly opposed by the US Global Climate Coalition (GCC); one of the largest and most aggressive lobby groups which has been instrumental in blocking US ratification of the protocol. Other

[13] The term "radiative forcing" denotes an externally imposed perturbation in the radiative energy budget of the Earth's climate system. (IPCC website (accessed on October 1/04): http://www.grida.no/climate/ipcc_tar/wg1/214.htm#611

aggressive opponents of the protocol include oil companies like Exxon, Mobil and Texaco.

Nigeria

As indicated by the EIA (August 2004), Nigeria is the seventh largest oil producer in the world, with proven reserves of between 25 billion (Oil & gas Journal) and 32.5 billion barrels (OPEC), and the largest oil producer in Africa, south of the Sahara. The country's main environmental challenges result from oil spills (EIA estimates about 4,000 oil spills in the Niger Delta since 1960) resulting in the loss of mangrove trees; air pollution from gas flaring; deforestation; and a general dearth of environmental regulations. Although improvements are being introduced, marine pollution and air pollution from gas flaring still constitute a serious problem. Exhaust emissions from the high rate of private car use, and from diesel and petrol powered private electricity generators, continue to leave Lagos, the commercial capital, shrouded in smog. This risk is exacerbated by the country's continued dependence on unleaded fuel.

Human Health

A significant outcome of the environmental risks perpetrated by the oil industry is its impact on human health. This is exemplified by the results of an experiment carried out by Asonye and Bello (2004) on children in the oil producing part of Delta State in Nigeria. They discovered that the accumulation of diverse categories of pollutants from drilling, production, and refining of crude oil, and from the production of petrochemicals especially black carbon, made the children more susceptible to pollution *keratoconjunctivitis (PKC)*[14].

Canada

Canada has the largest proved oil reserves in the western hemisphere (EIA, January 2004). It is a net exporter of energy (mainly to the US); in 2001, it was ranked fifth largest oil producing country in the world, behind United States, Russia, China, and Saudi Arabia. Canada's heavy reliance on energy-intensive industries has led to serious environmental concerns, primarily regarding air

[14] An eye infection with the following clinical symptoms: persistent itching, foreign body sensation, specified limbal / conjunctival discolouration,

pollution and climate change. In 2000, The NAFTA[15] Commission for Environmental Cooperation reports that the province of Ontario was the third-worst polluting state or province in both Canada and the United States. The report claims that Canadian toxic air emissions from plants and mills increased by 7% from 1998 to 2000 while those in the United States fell by 8% over the same period. According to Environment Canada (EC) while air quality in Canada has improved in some parts, there was a general lack of improvement in emissions of volatile organic compounds. EC blames automobile emissions for the highest contribution to air pollution, saying that the transportation sector contributed 40% of the nitrogen oxide and 25% of the carbon dioxide emitted into Canada's atmosphere; the result of a rise, between 1990 and 2000, of 9% in automobile travel and 21% in fossil fuel consumption. In 2001, the country was one of the world's leading carbon emitting countries, generating 156.2 mmt[16] of energy related carbon emissions (2.5% of the world total, EIA, January 2004). One of the major environmental effects of air pollution is acid rain and in Canada, this severely affects lakes, damages forests, and negatively impacts agricultural and forest productivity.

Acid Rain

The exhaust fumes released by petrol and diesel powered vehicles and industrial plants contain carbon monoxide, sulphur, and nitrogen oxides which react with water in the air to form strong acids like sulphuric and nitric acids (OECD, 2001). These acids are then deposited back to earth in the form of rain, fog, and snow (wet deposits) or as acidic gases and particles (dry deposits), raising the level of acidity in rivers, and lakes; endangering fish and plants, and historic buildings and monuments. Although a fringe school of thought suggests that acid rain may actually help to reduce the incidence of global warming, it is still generally regarded as an environmental risk that should be minimised.

[15] NAFTA = North American Free Trade Agreements (signatories are US, Canada, and Mexico)
[16] million metric tons

Paradox

Though the foregoing depicts the oil industry negatively, its existence is actually of immense benefit to society and technological development. The BP Sustainability Report, 2003, succinctly summarises the paradox of the industry's existence thus, "…energy that provides society with heat, light and mobility, fuelling economic growth and development, simultaneously presents us with serious environmental and social challenges".

The western world has depended on oil since the industrial revolution and the global economy will continue to run on it for the foreseeable future. It is true that there are environmental hazards associated with the industry but the high standard of living enjoyed in most parts of the world would be impossible without oil and gas. Nor would it be possible to enjoy the advantages of the numerous beneficial goods made from petroleum products such as plastics, medicines, clothing, and cosmetics.

Quoting the World Energy Assessment, the BP report recognises that energy is central to achieving the inter-related economic, social, and environmental aims of sustainable human development. For it to fulfil this role however, it must address the consequences of its production and consumption. This statement may be interpreted as awareness, on the part of BP and possibly the industry, of stakeholder concerns about environmental sustainability and the industry's willingness to deal appropriately with these concerns. This statement seems like an endorsement of stakeholder and legitimacy theories.

Commentary

As discussed above, repairing or maintaining legitimacy involves effective communication of corporate information to stakeholders. Such information must show that the company is in compliance with societal norms, and it may be disseminated via several media, including annual reports, statutory filings, web site postings, advertisements, and event sponsorship. Juggling between satisfying societal needs and its environmental sustainability demands on the one hand, versus the industry's profit motives on the other, oil industry management likely see CSR disclosures as a cost-effective means of influencing the public policy

process (Riahi-Belkaoui, 2001). There is established support for the argument that higher environmental risk gives rise to greater likelihood of negative societal perception, which in turn increases the need for communication through corporate disclosures such as environmental CSR reports (Riahi-Belkaoui, 2001). Therefore, given their reputation, oil companies will be expected to exhibit a high quality of environmental disclosure, relative to the other industries that society deems to be less environmentally risky. A high quality of disclosure suggests a superior level of transparency and accountability of disclosure. If this is in fact the case in the oil industry, it will serve to reinforce the relevance of the stakeholder and legitimacy theories to the industry.

Summary

Chapter three has attempted to connect the oil industry to environmental risks by exploring the reasons for the industry's global negative perception; thus establishing a need for the industry to adopt legitimisation strategies such as voluntary corporate environmental disclosures. Accordingly, corporate environmental reports may be regarded as managements' response to societal demands for improved corporate responsibility in the area of environmental sustainability. Despite the oil industry's positive contributions to society, these societal demands have arisen as a result of the observable and growing global awareness of the debilitating effects of the industry's operations on the environment, and on human health. Linking the theories discussed in chapter two, the oil industry's reputation, and the global perceptions discussed above, the industry will be expected to display a high level of legitimacy; with the annual report serving as the medium for measuring both the quality of environmental reporting and indirectly, the level of its legitimacy. Against this background, chapter four will evaluate the quality of the individual environmental reports of the companies which are listed on **Table 3**.

Chapter 4
METHODOLOGY

Overview

This chapter starts by justifying the use of annual reports. Then, it discusses the flexibility of GRI reporting standards and explains how this flexibility has been incorporated in an evaluation matrix for testing purposes. Next, it defines the selected corporate characteristics before considering the research paradigms and the choice of methodology, which are followed by a description of the sample selection criteria. The chapter then details the testing and scoring methods, including the statistical methods used in the empirical testing of the impact of selected corporate characteristics on the quality of the environmental reports.

Annual Reports

Representing an effective tool for managing external perceptions (Dowling and Pfeffer, 1975; and Lindblom, 1994), annual reports are considered to be the most popular medium for the dissemination of voluntary and statutory corporate information. In determining the medium of corporate communication to be reviewed in this dissertation, annual reports (defined here to include CSR environmental reports), were chosen because they are easily accessible. The company's most current annual reports were chosen, corresponding to the first complete reporting period after the introduction of the GRI reporting standards in 2002. In all but two[17] of the cases, this was the 2003 year end. In view of the increasing popularity of corporate websites as the preferred avenue for the dissemination of such information, the reports evaluated in this study were downloaded from the website of the respective companies. The websites of most of the sampled companies, like BP and Nexen Inc., contained both an annual report with in-depth financial information and an overview of environmental performance, and a separate CSR / stand alone environmental report containing detailed disclosure of environmental performance. Other companies, such as Pogo Producing Company and PetroKazakhstan, did not have a CSR / stand alone environmental report on their website, and failed to include any meaningful CSR

[17] ChevronTexaco have issued a 2003 CSR update which had to be read in conjunction with the full CSR report issued in 2002; and Premier Oil's most current report was for 2002.

environmental disclosure in their annual reports. At the other end of the scale, companies like Unocal and Murphy Oil provided in-depth disclosure of environmental performance in a separate, stand-alone CSR / environmental report, without any significant coverage of same in their annual report.

Usefulness of the annual report

The usefulness of the annual report as a medium for responding to public pressure and negative media reports has been acknowledged by writers such as Brown and Deegan (1999) and O'Donovan (1999). In particular, O'Donovan (1998) recognised its use as a way of correcting negative public perceptions about a company's environmental activities. In addition to the mainly financial information, several companies now include CSR disclosures within their traditional annual report e.g. BP and Nexen Inc. (see above) while others, like Unocal and Murphy Oil produce a separate annual CSR report, in addition to the traditional report. However, though the annual report represents the ideal document for evaluating the quality of a company's corporate disclosure, it is not without its limitations.

Limitations of annual reports

According to Wiseman (1982), corporate environmental disclosures constitute an incomplete reflection of a company's actual environmental performance. Similarly, Unerman (2000) contended that the social information disclosed in the annual report represents an inconsistent proportion of total disclosure, constituting only a small proportion of a company's total social reporting. Tilt (1994) takes the position that corporate environmental disclosure has little credibility and isn't sufficient information to be relied on; while Deegan and Gordon (1996) and Deegan and Rankin (1996) believe that it may be used by management for self-praise. Another shortcoming of using annual report disclosures concerns independent verification or corroboration of such information. Despite all the foregoing, the use of annual reports in evaluating corporate disclosure practices is well established. Wiseman (1982) advocated its use by stating that 'it is widely recognised as the principal means of corporate communication and has been the source of virtually all previous corporate research'. Besides, third party certification does not add much value or credibility unless there is an agreed upon

standard for reporting and the third party agency is trusted (MacLean, 1997). Generally, an annual report is a recognised means of corporate communication, and continues to be used for disseminating financial, social and environmental information (Deegan *et al*, 2000; Wilmshurst and Frost, 1998; O'Donovan, 2002).

GRI flexibility

Although it outlines the basic information for inclusion in a CSR report, the GRI standards allow for the 'wide spectrum of reporter experience and capabilities' by permitting reporting entities to 'select an approach that is suitable to their individual organisations'. It encourages organisations to use the prescribed reporting format because 'completeness and comparability in economic, environmental, and social reporting are best served when all reporting organisations adhere to a common structure'. However, the above is not a requirement since the standards also recognise that some reporting entities may choose a different structure because of their corporate characteristics. This recognition of corporate structural and operational divergence accords with the 'comply or explain' requirement of the UK's combined code and factored in the decision to consider the impact if any, of corporate characteristics on the quality of individual corporate environmental report. In addition, reporting organisations are encouraged to expand the reporting requirements by adding content that they have identified through stakeholder consultation. Despite such a flexible approach, there is enough specificity in the framework of the guidelines for it to promote global comparability and consistency of environmental reporting.

'In Accordance' versus Incremental reporting

Reporting organisations have the option of reporting 'in accordance' with the GRI guidelines. This option is designed for organisations 'that are ready for a high level of reporting and who seek to distinguish themselves as leaders in the field'. 'In Accordance' reporting is an attempt to balance comparability and flexibility, and it involves consistency with the principles set out in Part B (Reporting Principles), and compliance with the requirements of all the sections in Part C of the guidelines (Report Content), as well as inclusion of an 'in accordance' report signed by the CEO. At the opposite end, organisations with an immature reporting capacity may choose an informal reporting approach which involves an

incremental basis of reporting. Such companies are thereby permitted to 'choose not to cover all of the contents of the guidelines in their initial efforts, but rather to base their reports on the GRI framework and to incrementally improve report content coverage, transparency, and structure over time'.

Corporate characteristics

To ascertain the impact of corporate characteristics on the quality of individual company environmental report, the following characteristics have been chosen:

- industry membership (oil industry)
- ownership structure (public companies)
- economic performance (measured by the profitability metric of return on asset)
- size (measured by gross operating revenue)
- influence of local reporting requirements (measured by the identity of the audit firm)
- influence of local culture and attitudes (measured by corporate jurisdiction)
- governance structure (measured by the proportion of non-executive directors on the board)
- liquidity (measured by the quick ratio).

Industry membership

Adams *et al* (1998) found that 'industry membership' was a primary factor in reporting environmental information. Similarly, Deegan & Gordon (1996) found that firms disclose relatively more positive information as environmental exposure increases. Thus, by virtue of being in an industry with significant environmental impact, oil companies may regard greater environmental disclosure as a way of mitigating the effect of their potentially risky activities on the environment and society (Hackston & Milne, 1996). The oil industry was selected as the sole industry of focus for this dissertation because its singular dominance of global environmental activities makes research into the industry more topical and of greater relevance to concerned global stakeholders than research into less environmentally sensitive industries (Wiseman, 1982).

Ownership structure

Compared with privately owned companies which tend to be owner-managed, the agency problem arising from the ownership structure of public companies imposes on its management a greater pressure for transparency and accountability. As a result, public companies have a higher threshold of disclosure. The more diverse the shareholding, the greater the onus on management to communicate their stewardship via media such as corporate reports; and the higher the expected quality of the report. Consequently, this dissertation focuses on multi-national companies with listings on the London and / or New York Stock exchanges.

Since all the sampled companies belong to the same industry and since they are regarded as having the same ownership structure (multinational publicly traded companies) these two characteristics have not been included as variables in the regression analysis below.

Economic performance

Ullman (1985) found that voluntary CSR disclosure is a function of corporate performance – the poorer the company's economic performance, the lower is its voluntary disclosure. Citing Zmijewski and Hagerman's (1981) argument that a higher net income increases a company's visibility, Cowen *et al* (1987) indicate that profitability is a factor that induces management to undertake more extensive CSR disclosure. In this dissertation, economic performance is measured by profitability, as represented by return on assets.

Size

Most studies of social disclosure have identified size as a significant characteristic in explaining corporate CSR disclosure (Preston, 1978; Trotman and Bradley, 1981; Cowen *et al*, 1987). Linking size to ownership status, Cormier and Gordon (2001) showed that larger companies provided more social and environmental information than smaller ones. As globalisation is synonymous with large multi-national companies having a diverse shareholder base, it may be regarded as an attribute of corporate size. Citing the work of previous researchers, Campbell *et al*

(2003) justified the selection of large companies[18] on the grounds that their study would be more meaningful due to the existence of size effects in social reporting, causing trends and switch points to be more pronounced than they would be in smaller companies. Spicer (1978) found that larger companies[19] provide better environmental reports than smaller ones; so did Trotman and Bradley (1981) whose findings suggest that larger sized firms[19] not only provide more environmental disclosure, but have a positive systemic risk and a longer-term planning horizon. In this dissertation, size is measured by the company's gross operating revenue, denoted in US dollars.

Local culture, attitudes and reporting requirements

Adams *et al* (1998) also found that the level and nature of disclosure are influenced by a company's corporate jurisdiction of domicile. This influence may be attributable to local custom and attitude towards environmental sustainability issues, and to related auditing and accounting reporting requirements and laws. Reflecting the global trend, the oil companies included in this dissertation are domiciled either in North America (US or Canada) or in Europe. As the sampled companies were all audited by the 'big four', names of audit firms were selected as a corporate characteristic to further underscore the impact of local attitude, laws, and reporting requirements on the quality of environmental reporting. In instances where the audits are carried out jointly, only the name of the principal audit firm has been included in the empirical test.

Governance Structure

This is measured by the proportion of independent non-executive directors on the board. This metric was chosen as a characteristic in order to test the effect, if any, of an independent board on corporate reporting. The expectation is that such independence will lend itself to a higher level of accountability in corporate reporting, in the form of increased transparency and greater objectivity.

[18] Defined by market value as companies that had been continual members of the FTSE 100 from January 1974 to June 1998

[19] Defined in terms of financial performance and risk

Liquidity

This is a measure of a company's capacity to pay its debts as they come due. It is an important financial ratio of corporate credit worthiness and was chosen as a characteristic to test its impact, if any, on the quality of environmental reports. The metric used is the quick ratio.

Research paradigms

In relation to research, Hussey & Hussey (1997) use the term 'paradigm' interchangeably with the term 'philosophy', defining it as "...assumptions about how research should be conducted". They identified the two main paradigms as ***positivist*** (a quantitative and scientific philosophy which is founded on the belief that the study of human behaviour should be conducted in the same way as scientific study); and ***phenomenological*** (a qualitative and humanistic philosophy which is concerned with understanding human behaviour from the participant's own frame of reference). To them, these philosophies represent, in practical terms, extremes of a continuum with many intermediate stages. Morgan and Smircich (1980) identify six such intermediate stages, including a 'reality as a contextual field of information' stage which allows for the application of both paradigms in conducting research. At the same time as it recognises the existence of objective reporting frameworks and assumptions in terms of the disclosures in corporate reports, it also accepts that corporate decisions are motivated by subjective and contextual considerations, permitting the collection of appropriate information to enable further investigation.

Methodology

This study uses a combination of both paradigms in accordance with Morgan and Smircich's 'reality as a contextual field of information' stage. The GRI principles and the information contents of a CSR report comprise qualitative information based on the phenomenological philosophy; which is the more appropriate approach for evaluating the quality of environmental disclosures. However, to analyse, draw objective conclusions, and better understand the underlying causal relationships and factors that underpin the results obtained from a qualitative test, a positivistic or quantitative approach is more appropriate. This suggests that qualitative data should be converted into an objective and measurable frame of

reference using a quantitative framework, to facilitate a scientific interpretation of the results of the qualitative tests. The statistical methods used for the analysis part of this dissertation are a combination of descriptive statistics and linear regression, incorporating the use of dummy data for non-quantitative variables. Nevertheless, the ensuing discussions and explanations about the quality of the environmental reports, and about the impact of corporate characteristics, if any, will borrow from a phenomenological approach.

Sample selection

The oil companies sampled in this dissertation were taken from a population of multi-national, publicly traded oil companies only. Since, as previously stated in chapter two, publicly quoted companies are especially likely to resort to the use of legitimising strategies to protect their corporate existence, they would be more likely to respond to market forces and societal perceptions. Consequently, the adoption of voluntary corporate environmental disclosure as a legitimising strategy can be directly attributable to a company's publicly traded status and the associated diverse ownership base; traits that oblige a company to establish and maintain reliable corporate governance structures in order to successfully persuade stakeholders that it is truly transparent and accountable. For these reasons, national oil companies which are government owned and lack shareholders, and other non-publicly traded oil companies were excluded from the population. The publicly quoted multinational oil companies that were included in this exercise had to satisfy the following criteria:

- be listed on the Society of Petroleum Engineers' (SPE) website as (a) an integrated global (major) oil company; (b) additional independent oil company outside the US; or (c) additional independent oil company within the US
- be a multi-national oil company with global oil and gas operations
- be listed on the London Stock Exchange and / or the New York Stock Exchange

The thirty-four oil companies that met the above criteria are listed on **Table 3** and their annual reports (defined to include all CSR environmental disclosure) were obtained by visiting the website of the respective companies.

Method of Analysis

The method of analysis adopted in this dissertation acknowledges the above flexibility in the GRI approach to reporting. To allow for differences in reporting format and approach, and borrowing from the method embraced by Hussey *et a*l (2001), the questions in **Table 4** (the evaluation matrix) have been framed to encapsulate the substance of the GRI reporting requirements and not just its form. Consequently, in evaluating the disclosure content of the reports vis-à-vis the GRI requirements, more emphasis was placed on the substance of the reporting entity's disclosure; with less emphasis being put on compliance with the form of the reporting requirements. In this regard, the review did not concentrate on the extent to which the reports reflected the wording or format of the GRI requirements. Rather, it sought to ascertain that the disclosure properly reflected the intended objectives of the reporting requirements; that they were meaningful and where necessary, properly quantified.

Testing and scoring method

The testing and scoring methods for evaluating the quality of individual company environmental reports are detailed below under the headings, environmental matrix and corporate characteristics. The overall quality of environmental reporting within the oil industry is judged on the following basis: it is considered to be **high,** if 50% (17) or more of the thirty-four companies in the sample achieve a minimum score of 65% on the matrix; an **average** level of reporting corresponds to 66% (23) or more companies achieving a minimum score of 45%; and a **low** level of reporting is assumed if 34% (11) or more companies achieve a score below 45%.

Environmental matrix

The reporting requirements of the guidelines have been summarised into the fifty-five questions defined on the matrix (**Table 4**). These questions encompass sections one to four of Part C of the GRI guidelines, as well as the environmental section of the performance indicators outlined in section five of the same part. The researcher has added the four additional questions, in sections five and six, to test how many of the companies followed the 'in accordance' reporting requirements;

how many chose an informal approach to reporting; and how many made no reference to the GRI guidelines at all.

Companies were scored on the basis of compliance or otherwise with the GRI requirements. Compliance is indicated by a score of 1 while non-compliance attracts a score of 0. A company's performance is evaluated on the basis of the total scores achieved out of fifty-five. These values represent the dependent variable in the empirical regression model in the following section. Ttotals are also provided for each of the main reporting subheadings to enable a more detailed investigation and analysis of the results obtained. The qualitative evaluation of the results is based on the outcome of descriptive statistical analysis and on the use of graphs which were drawn by using an excel spreadsheet.

Corporate characteristics

The data on which the corporate characteristics metrics are based were obtained from the annual reports (as defined on page 42) posted on the websites of the sampled companies, and from the financial database of Thomson Analytics, a leading financial database. Using SSPS for windows, linear regression was used for the empirical testing of the impact of the corporate characteristics (the independent variables) on the quality of environmental reports, to provide a scientific basis for the analysis and the conclusions reached. Non-numeric characteristics have been redefined using dummy data as follows:

Audit firm:

The characteristic, local reporting requirements, uses the identity of the audit firm as a metric, and seeks to measure the influence of local reporting requirements on the quality of reporting where a different national office of the same global accounting partnership audits different companies. For example, Amerada Hess Corp. is audited by Ernst & Young (US) while BP is audited by Ernst & Young, UK. Both audit firms belong to the same global partnership network but each has to comply with the auditing and reporting regulations of the country in which it practices, and it is the impact of this characteristic on the quality of reporting that is being measured. Accordingly, the audit firms have been ascribed the following dummy data:

Ernst & Young = 1; PwC = 2; KPMG = 3; Deloitte & Touche = 4; and the different countries have been quantitatively redefined as follows: US = 0; UK = 1; Italy = 2; Canada = 3; France = 4; Russia = 5; Norway = 6; Spain = 7. Thus, looking at Ernst & Young, the Canada office is denoted by 13 whilst the Norwegian office becomes 16. PwC in Russia is shown as 25 and KPMG France is 34.

Corporate jurisdiction

Since the corporate jurisdiction of the sampled companies is either in North America or in Europe, only these two jurisdictions are recognised. North America has been redefined as 1 and Europe as 2.

The linear regression model

The empirical model for the linear regression is of the form:

Qenv = Ep + Sz + Lr + Ca + Gs + Li

where: Qenv = quality of environmental reporting (measured by GRI scores achieved on the evaluation matrix)

Ep = Economic performance (measured by profitability metric of return on assets)

Sz = Size (measured by gross operating revenue)

Lr = Local reporting requirements (measured by audit firm name)

Ca = Local culture and attitudes (measured by corporate jurisdiction)

Gs = Governance structure (measured by proportion of non-executive directors on the board)

Li = Liquidity (measured by quick ratio)

Generally, the term statistics refers to the means by which data are analysed, interpreted, and used for making decisions. Descriptive statistics, such as *mean, median, mode* and *standard deviation*, are a form of statistics that describe patterns and general trends in a data set by examining one variable at a time. To explore the possible existence of a causal relationship between two variables, linear regression techniques are generally used. This technique involves identifying a dependent variable (this is represented by Qenv in the above equation) and an independent variable (represented by the corporate characteristics identified above). However,

the result of a statistical analysis, and the conclusions drawn therefrom, are only as reliable as the data on which they are based.

This chapter informed the debate, firstly by defending the use of annual reports and by defining the GRI reporting contents as well as the selected corporate characteristics. Secondly, it outlined the main research methodologies and justified the choice of methodology for this dissertation. Thirdly, it reviewed the sample selection basis before specifying the testing and scoring method. Fourthly, it lists the variables and describes the regression model used for the statistical analysis. The results obtained from evaluating a company's environmental report are summarised on **Table 5** (for details please refer to **Table 4** – environmental matrix). These results, together with those from the statistical analyses are analysed and discussed in chapter five.

Chapter 5

ANALYSIS AND DISCUSSION

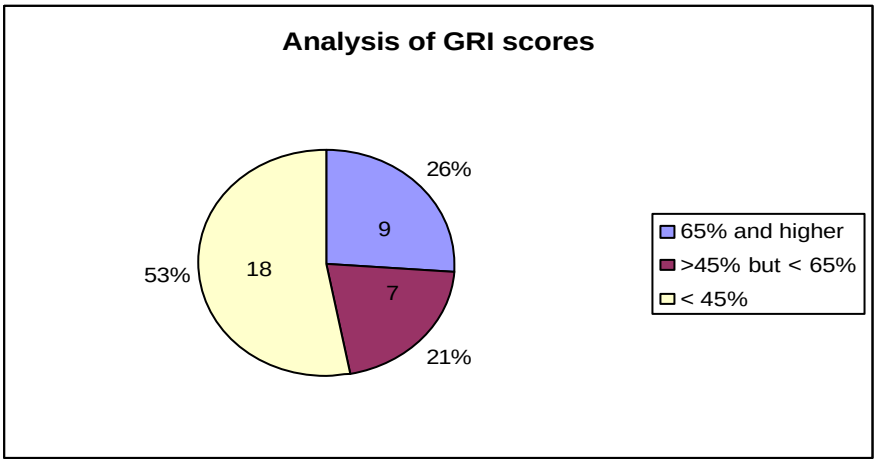
Overview

From the summary of the GRI scores on **Table 5**, we can conclude that the level of compliance with the GRI environmental reporting requirements is low and not reflective of the industry's high level of environmental impact. Except in a few instances, the disclosures lacked sufficient depth to reflect proper accountability, particularly in relation to the quantification of green house gas emissions. Although the vast majority of companies disclosed their environmental policies, which do not constitute a measure of environmental performance or activity, topics relating to actual environmental performance were poorly disclosed. Disclosure relating to water use and pollution, waste, energy use, and supply chain were sporadic, with information on waste materials from external sources, description of non-water use, the use and emission of ozone depleting substances, and energy sources for production and delivery to externals being quite scant.

Analysis of GRI scores

Of the thirty-four multinational oil companies sampled (**Table 5**), only 26% i.e. nine companies achieved a score of 65% or higher; 21%, representing seven companies, achieved a score of more than 45% but less than 65%; and 53%, equal to eighteen companies, scored less than 45% (Figure1). To the extent that more than half of the sampled companies scored less than 45%, one can safely infer that the quality of environmental reporting is poor.

Figure -1



Statistically, Figure 2 tells us that the mean score of 23.38 is higher than the median score of 22, and the mode score of 11 is exactly half of the median score. The mean measures the average value, the median is the middle value in order of size, and the mode is the most popular value. Generally, the closer these values are to each other, the more representative of the sample the mean is considered to be. The standard deviation also measures the overall variation from the mean. The smaller it is, the more reliable the mean is. A standard deviation of 13.09 such as is reported in Figure 2 informs us there is a high chance that the mean does not represent a particular score. This is corroborated by a range value of 44, which shows the difference between the largest (49) and smallest (5) numbers. The foregoing supports the conclusion reached by examining **Table 5**. As a result of the wide dispersal of the scores, the mean is not a representative figure as over half of the sampled companies scored less than this value. Thus, the large dispersal of the scores from the mean reflects the wide divergence in the quality of the individual environmental reports of the sampled companies, lending weight to the conclusion that the overall quality of environmental reporting within the oil industry is poor.

Figure 2

Total scores: GRI	
Mean	**23.38**
Median	**22.00**
Mode	**11.00**
Standard deviation	**13.09**
Skewness	**0.15**
Range	**44.00**
Minimum	**5.00**
Maximum	**49.00**

Breaking this down by main reporting subheadings, we are able to identify the areas of reporting strength and weakness. From Figure 3 below, we notice that under vision and strategy, 76% (26 companies) of the companies scored 50% or higher, reflecting a high quality of reporting. More reports contained a statement on the company's vision and strategy on contribution to sustainability than

included a CEO statement of commitment to it, raising questions about the level of true accountability of reporting. Unfortunately, the steps involved in verifying the accuracy of disclosure are beyond the scope of this dissertation.

Figure 3

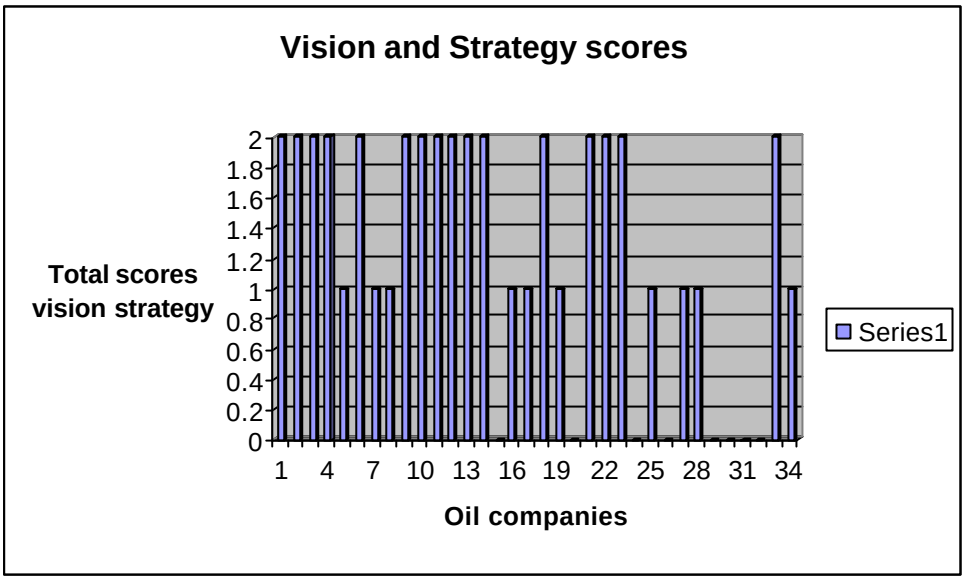
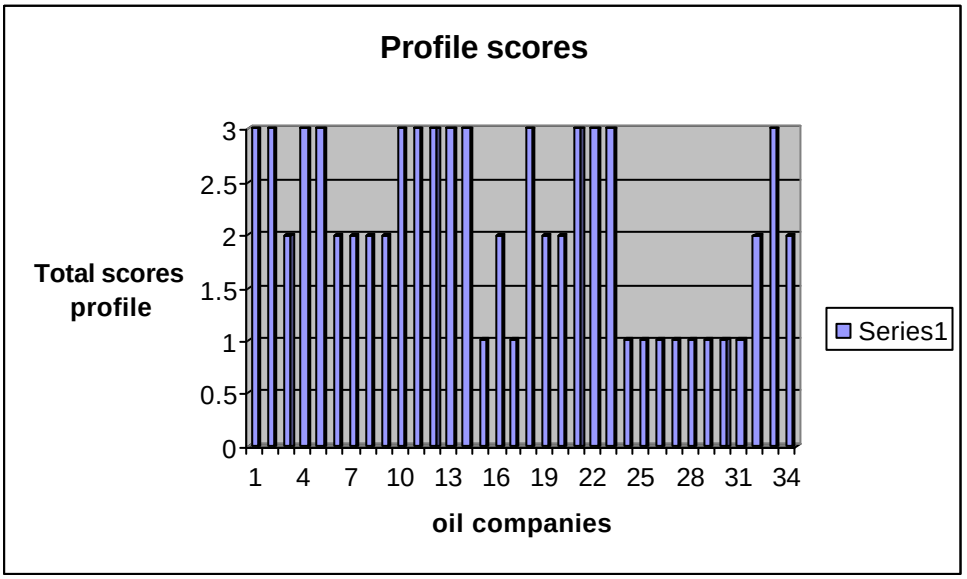


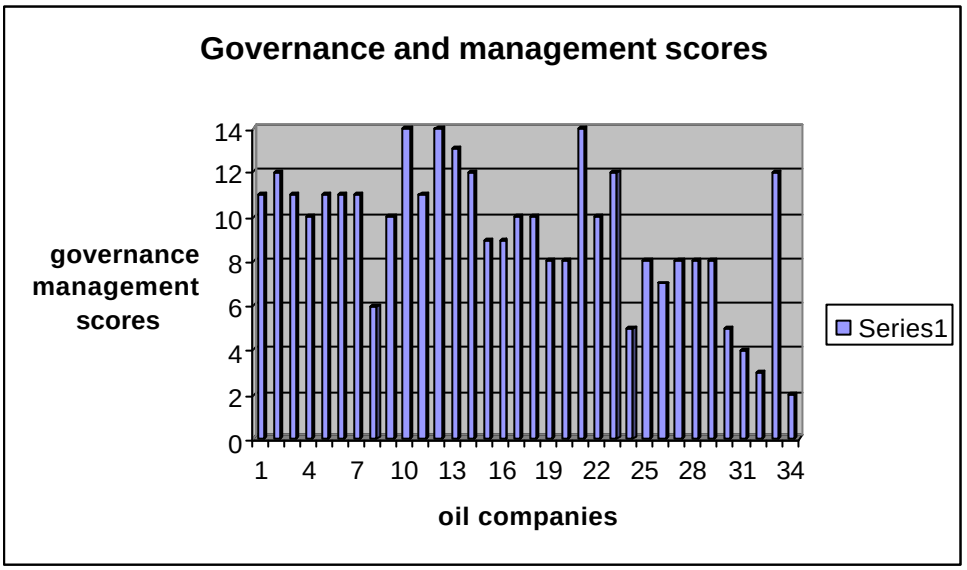
Figure 4 is based on the scores for the second subheading, 'profile'. It shows that 71% (24 companies) scored 50% (1.5 scores) or higher. All companies gave detailed disclosure about their organisation and operations but some did not identify their stakeholders and several more failed to include a CSR report profile and scope.

Figure 4



Subheading 3 is divided into governance structure and management systems (management), and stakeholder engagement. Under management, 79% scored 50% and higher while 21% scored less than 50% (Figure 5). As its name suggests, most of the required disclosure in this section relates to corporate governance structures, concentrating on board and management composition and expertise; shareholder participation; and policies on environmental issues. The high quality of reporting under this head could be attributed to the experience of reporting companies in annually providing this information.

Figure 5



Overall, the quality of environmental reporting under these three headings is quite high, with about three-quarters of the companies complying with more than 50% of the reporting requirements. As mentioned, a possible explanation is the fact that disclosure in this area comprises mainly corporate information that normally accompanies the financial statements and investment reports. It would thus be easy to obtain and disclose. Reporting under these three subheadings constitutes the areas of reporting strength, a conclusion that is substantiated by the statistical analysis in Figure 6.

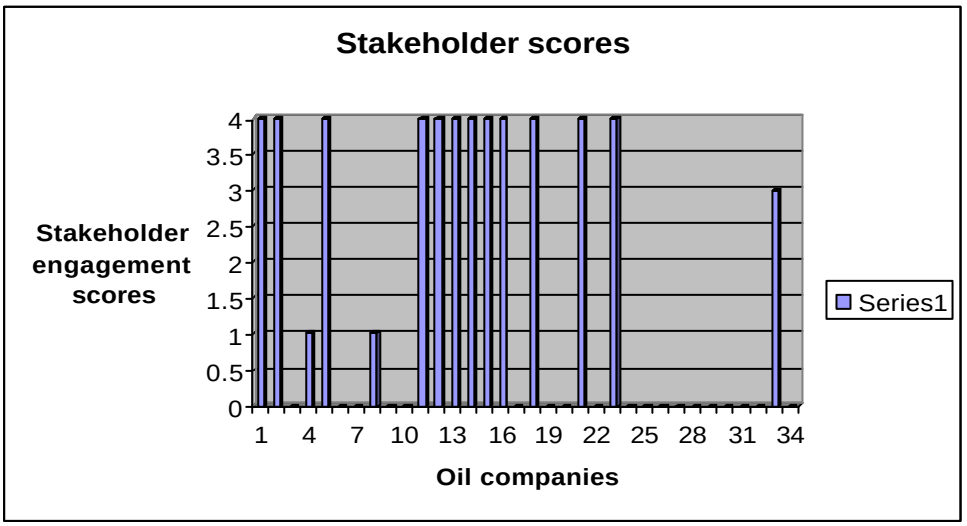
Figure 6

Total scores: Subheadings 1 – 3a	
Mean	**12.68**
Median	**14.00**
Mode	**15.00**
Standard deviation	**4.39**
Skewness	**-0.33**
Range	**14.00**
Minimum	**5.00**
Maximum	**19.00**

Figure 6 informs us that the mean for the first three subheadings of 12.68 is lower than the median score of 14 and the modal value of 15, which are almost the same figure. The distribution is negatively skewed at -0.33. The standard deviation of 4.39 suggests a more clustered distribution of the scores, as evidenced by the range value of 14. The more narrow dispersal of scores in these sections suggests a more representative mean which implies a higher quality of scores and reporting. This conclusion supports the findings shown in Figures 3, 4, and 5 above.

Unlike the previous three subheadings, the results for the subsequent four subheadings depict a low quality of reporting. In the 'stakeholder engagement' section, Figure 7 shows us that only thirteen companies (38%) scored 50% and higher, with the rest scoring less than 25%.

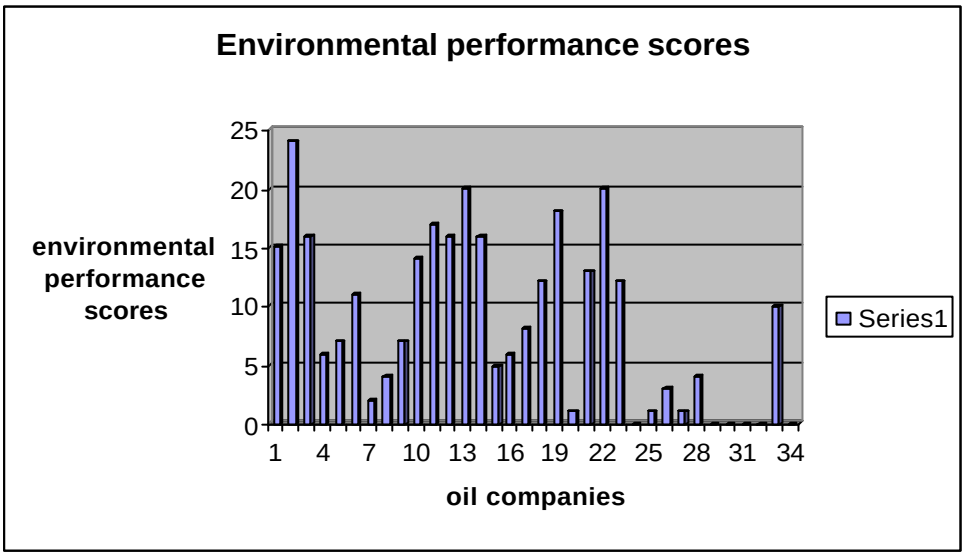
Figure 7



Besides failing to identify their stakeholders, most of the companies did not disclose their approach to stakeholder consultation.

Subheading four, environmental performance, requires disclosure of the impact of operational activities on the environment. Required detailed disclosure includes information about greenhouse gas emissions, amount of energy and water use, renewable energy initiatives, waste management policies, details of environmental expenditure and fines, and general contribution to sustainability. Surprisingly, only eleven companies (32%) scored over 50% in this section (see Figure 8) with

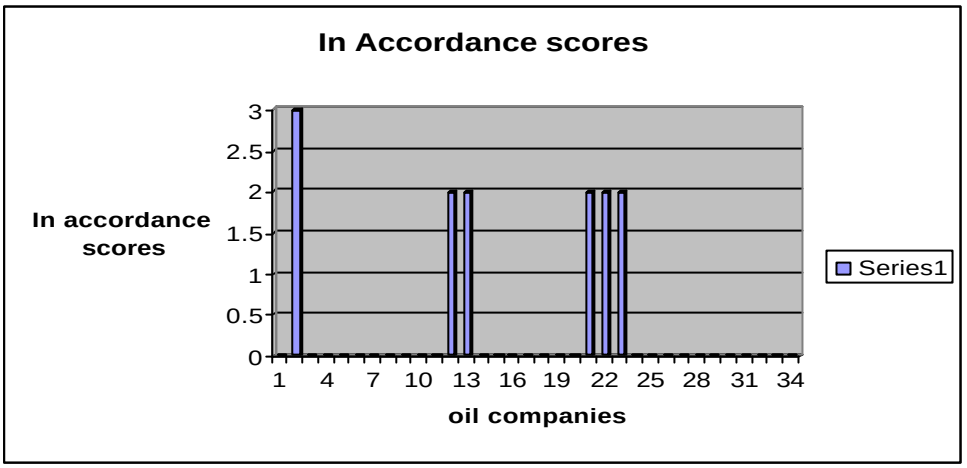
Figure 8



the majority of companies (47%) scoring less than 25% of the section's total achievable points. Since this dissertation excludes a multiyear comparison, it is not possible to comment on whether this result represents an improvement on the quality of previous years' reporting. Bearing in mind the voluntary nature of CSR reporting and the flexibility afforded by the GRI standards, it is worth noting that only 53% of the sampled companies scored more than 25% in this section; an outcome that indicates much room for improvement and that might suggest the need for a less voluntary and flexible reporting guideline.

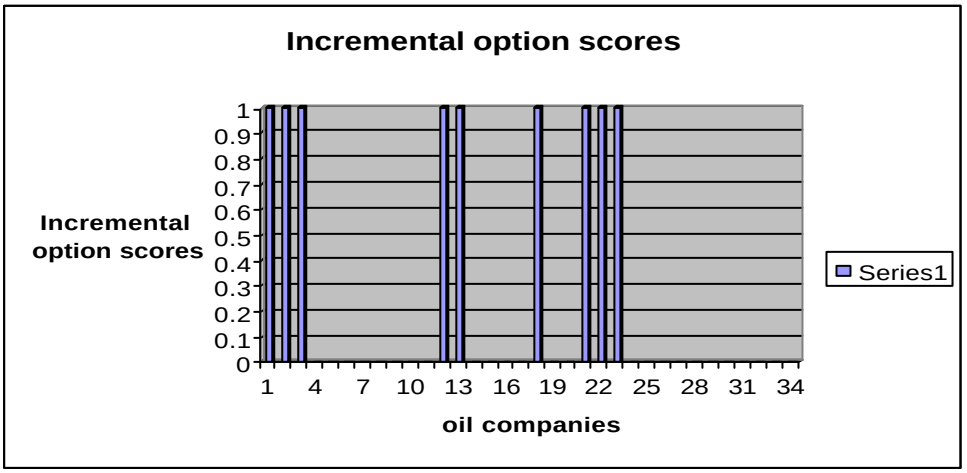
Subheading five has been included to establish the number of companies that prepared their reports 'in accordance' with the GRI standards. This is the full reporting, requiring more effort than an informal reporting approach. As Figure 9 shows, only six companies, representing 18%, reported in accordance. Of this number, only BP fully complied with all the requirements; the other companies did not include an 'in accordance' statement signed by the CEO, again suggesting a questionable level of accountability and transparency.

Figure 9



Subheading six is the converse of subheading five in that it seeks to establish the number of companies reporting after the informal fashion, and the number of those that were not influenced by the GRI guidelines at all. From Figure 10, we glean that only 26% (9 companies) scored higher than 50% in describing how their report was influenced by the GRI guidelines.

Figure 10



Overall, the disclosure in the last two subheadings was the poorest. Most of the companies did not make any disclosure at all, scoring zero points (28 and 25 companies respectively under subheadings five and six). Similar to Figure 1 above, the statistical results in Figure 11 disclose that the mean of 10.71 is higher than the median value of 9.50 and much higher than the modal value of 0, showing that there is a wide dispersal of scores and that the mean is not representative of the sample. The distribution is positively skewed at 0.44 and the very wide distribution of the scores is represented by a standard deviation of 9.25 and a range value of 32.

Figure 11

Total scores: Subheadings 3b - 6	
Mean	**10.71**
Median	**9.50**
Mode	**0.00**
Standard deviation	**9.25**
Skewness	**0.44**
Range	**32.00**
Minimum	**0.00**
Maximum	**32.00**

Though these four subheadings focus mainly on detailed disclosure of environmental activities and performance, the overall results indicate a poor quality of environmental reporting. In view of the increasing global stakeholder concerns about environmental sustainability issues and the oil industry's central role in the debate, the results are contrary to what one might expect, based on the dictates of the systems or social oriented theories about the voluntary corporate disclosure phenomenon. Contrary to the above results, the theories insinuate that companies operating in such an environmentally sensitive industry would be expected to display legitimising tendencies in the form of substantive environmental reporting. However, further research, which is beyond the scope of this dissertation, would need to be undertaken before a definite conclusion can be drawn in this regard.

Commentary

There are several possible explanations for such poor quality of environmental reporting. It is likely that because of the relative newness of environmental reporting, companies do not yet have a proper system in place for collecting information and for reporting. They may not yet be familiar with what constitutes pertinent and appropriate information for this purpose. Also, the cost of complying could be cited as a factor, as can the voluntary nature of the whole environmental reporting process.

From an economic perspective, the status of oil companies as an important global economic force, through fuelling modern development, may provide further explanation for the poor quality of reporting. By virtue of this position, the whole industry (and not just OPEC) may be regarded as a cartel which enjoys a position akin to a monopoly over global oil and gas resources and products. This dominant position minimises the need for the industry to adopt legitimising strategies similar to voluntary environmental disclosures. As stated, the American oil industry makes up more than half of the global industry and constitutes a very powerful US government lobby group; manipulating stakeholder perception by influencing environmental policy and standards at the highest level. A good example of this form of legitimacy in practice is the US' individual refusal to ratify the Kyoto accord. However, if the evolution of the financial reporting process is anything to go by, it is likely that the quality of environmental reporting will improve over time, as awareness about its importance increases and perhaps also, with the help of formal relevant regulations.

The next section will test for the impact of corporate characteristics on the quality of oil industry environmental reports.

Analysis of impact of corporate characteristics

Linear regression is used to predict the effect on one variable of a change in another variable. In this case, it is used to predict the effect of changes in each of the corporate characteristics, on the total GRI score of each of the sampled oil companies. The results of the analysis are shown on **Table 7**.

Figure 12

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.612[a]	.375	.236	11.444

a. Predictors: (Constant), Quick Ratio, corporate jurisdiction, audit firm, 2003 Revenue (US $ bn), NED/Total Directors, Profitability (RoA)

Figure 12 above (from **Table 7**) is a summary of the variables in the regression model set out at the end of chapter four. It shows the values for R and R^2. R has a value of .612 representing the correlation between GRI scores and the corporate characteristics. R^2, representing the coefficient of determination, signifies that the corporate characteristics account for only 37.5% of the variation in the GRI scores. This may be interpreted to mean that 37.5% of any change in the quality of environmental reporting may be attributed to the corporate characteristics in our model. Conversely, 62.5% of the variation in the quality of reporting is determined by other factors which cannot be identified from this model. Determining the nature of these other factors would require further research which is beyond the scope of this dissertation. Thus, these percentages imply that the relationship between the GRI scores and each corporate characteristic may not be a linear one (as hypothesised by the regression formula), or that there are other unidentified variables such that these selected corporate characteristics have a low impact on the quality of environmental reporting within the oil industry.

Figure 13

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2119.759	6	353.293	2.697	.035[a]
	Residual	3536.271	27	130.973		
	Total	5656.029	33			

a. Predictors: (Constant), Quick Ratio, corporate jurisdiction, audit firm, 2003 Revenue (US $ bn), NED/Total Directors, Profitability (RoA)

b. Dependent Variable: Total scores

'ANOVA' (the analysis of variance) figure above (also from **Table 7**) indicates how well the model is able to predict the outcome of the variables. The most important value is the *F* ratio which measures the extent to which the model has improved the prediction of the outcome compared to the level of inaccuracy of the

model. At 2.697, it is significant at 5% level of significance since, at 3.5%, the column labelled 'sig.' is less than five percent. This result indicates that there is less than a 5% chance that the *F* value will occur by chance alone. Since, in this case, the ratio is greater than one, the regression model represents a good model for predicting the overall impact of corporate characteristics in determining the quality of environmental reporting within the oil industry.

Figure 14

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-6.147	20.296		-.303	.764
	Profitability (RoA)	-.172	.330	-.100	-.521	.607
	2003 Revenue (US $ bn)	.060	.033	.338	1.841	.077
	audit firm	.004	.187	.004	.020	.984
	corporate jurisdiction	12.181	5.465	.430	2.229	.034
	NED/Total Directors	.155	.196	.149	.791	.436
	Quick Ratio	1.047	6.368	.032	.164	.871

a. Dependent Variable: Total scores

Figure 14, labelled 'Coefficients' (from **Table 7**) represents the regression line and informs us about the ***t*** value (which is derived by dividing B by its standard error). The B coefficient for the constant represents the GRI score if the quality of reporting was zero while the coefficient for each of the corporate characteristics represents the predicted change in the GRI score for a unit change in each of the characteristics. If each company's profitability (measured by return on assets, ROA) increased by one unit, the GRI score will be expected to fall by 17.2%. The ***t*** value of - .521 is not significant at a 5% level so profitability is not a required variable in the regression model. The same conclusion may be drawn about the usefulness of local reporting requirements (measured by the identity of audit firm); governance structure (measured by the proportion of non-executive directors on the board); and liquidity (measured by the quick ratio) as reliable characteristics for predicting changes in the GRI score and as determinants of the quality of environmental reporting within the oil industry. Their beta values are close to zero and the significance levels of their ***t*** values are much higher than the 5% level required.

Conversely, size (represented by operating revenue) and local culture and attitudes (represented by corporate jurisdiction) characteristics may be accepted as useful models for predicting changes in the GRI score. The t value for operating revenue is 1.841 at a level of significance of .077 while the corresponding results for corporate jurisdiction are 2.229 and .034 telling us that at 10% and 5% levels of significance respectively, the models are acceptable in predicting changes in GRI score for a unit change in each characteristic. The overall conclusion from the above analysis is that only these two corporate characteristics i.e. size and corporate jurisdiction may be regarded as having an impact on the quality of environmental reporting within the oil industry. As detailed above, the other characteristics do not have any significant impact on the quality of reporting.

Commentary

Size and corporate jurisdiction are the two characteristics that appear to have a significant impact in determining the quality of environmental reporting within the oil industry. Of the nine companies that scored more than 65%, 6 of them have a European corporate jurisdiction. Of the remaining three companies with North American corporate jurisdiction, two of them are based in Canada and only one is based in the US. The three companies that followed the 'in accordance' reporting option were BP, Total, and Shell, all European based companies, ranking 3rd, 4th, and 1st by operating revenue (measure of size) out of the thirty-four companies sampled. The 2nd, 5th, and 6th largest by revenue (size) were ExxonMobil, ChevronTexaco and ConocoPhillips. They scored respectively, 47%, 58%, and 40%, corroborating the result from the regression analysis above that operating revenue as a size metric has an impact on the quality of the environmental report (i.e. ConocoPhillips was the only large company to produce a poor quality report by scoring 40%). Interestingly, the corporate jurisdiction of these three oil companies, along with that of the majority of oil companies that scored less than 50 % is in the US. In fact, of the sixteen companies that scored in excess of 45%, only five have their jurisdiction in the US, three are based in Canada, and the rest are based in Europe (one each in Italy, Spain, Norway, France, UK/Netherlands and three are UK based). Of the eighteen companies that have their corporate jurisdiction in the US, 73% (equal to 13 companies) scored less than 45% out of which five companies scored less than 20%. Only one UK company, out of a total

of five, scored less than 45%; out of a total of six Canadian based companies, half of them scored less than 45% with the worst scoring 20% (see **Tables 5 and 6**).

The above analysis implies that European companies have a higher quality of voluntary environmental reporting than their North American counterparts. On-going American cynicism about the link between the harmful effect of greenhouse gases and the negative impact of oil industry operations and products may provide a logical explanation for the difference between the quality of American reporting and Canadian reporting on the one hand, and between American and European reporting on the other. Also, to the extent that the companies with corporate jurisdiction in the US appear to only be listed on the New York Stock Exchange, their ownership base will be mainly American. As a result, any legitimising strategy employed by these companies will be tailored to suit that group of stakeholders (their relevant public). Therefore, given the local attitude towards environmental sustainability, qualitative reporting in this area would have little significance.

Looking at the other characteristics, no particular pattern emerges confirming that they have no significant impact on the quality of a company's environmental reporting. Economic performance does not appear to have any impact because thirteen of the twenty companies (65%) with the lowest GRI scores have the highest return on assets values and the three top GRI scoring companies are amongst the worst performing companies based on return on assets. There is no noticeable trend from looking at local reporting requirements (measured by audit firm; **Table 7** and **Figure 14**) and no further comments are warranted. As no apparent trend can be deduced from a review of the remaining two characteristics (governance structure and liquidity) no further comments will be made.

Summary

The results of the statistical analyses corroborate the conclusion drawn from the GRI matrix that the quality of environmental reporting within the oil sector is low. Also, the corporate characteristics that have an impact on the quality of individual oil company, and oil industry, reporting are size (profitability) and local customs and attitude (corporate jurisdiction).

Implications for corporate governance

The quality of environmental CSR reports has several corporate governance implications for the oil industry, not least because of its critical role in the globalisation and environmental sustainability debate but more so because of its primary role in triggering the current wave of corporate scandals, and the recent significant restatement of reserves by Royal Dutch/Shell group. The collapse of Enron Corp., the largest global oil and gas company in 2002 set off a wave of corporate scandals that has been likened to 'the business world's financial equivalent of the 1989 Exxon Valdez oil spill' (Williams, 2002). Thus, issues of corporate governance and accountability are fast becoming the basis for corporate evaluation in the areas of environmental care, socio-political relations, financial and other non-financial areas outside the scope of normal corporate activities. Nowhere is the pressure greater than in the oil industry which is witnessing increased stakeholder scrutiny of its operations, reporting processes, and governance structures.

The industry is witnessing an increase in regulations and reporting requirements. While some of the regulations are externally imposed, others are self imposed; all geared towards protecting investor and other stakeholder confidence by ensuring greater transparency and accountability on the part of oil companies. The Enron scandal, based on financial trickery involving the off-the-books deals that propped up Enron's reputation even while it foundered in debt, is a good example of the irregularities in corporate reporting that misled investors; helping to reinforce the importance of accountability and transparency in corporate reporting as standards of good governance. For oil companies, this issue has been exacerbated by the aforementioned reserve restatement by Shell. As this area of reporting is an important aspect of the oil company reporting process, the industry is now subject to greater scrutiny in this area of disclosure.

The issue of auditor independence and the reliability of the audit process are closely linked to the above. Regulators have already responded with a wave of new governance standards including the establishment of an audit committee, the majority of whose members have to be independent non-executive directors (UK combined code). In the US, the principal executive and financial officers of a

public company must each certify the financial and other information in the annual report. Thus, poor quality of voluntary environmental reporting may further undermine the industry's already tenuous position in this regard leading to stricter legislation and external regulation, in addition to undermining investor confidence in corporate reports.

This concern is echoed in the new book, "Building Public Trust: The Future of Corporate Reporting" by Sam DiPiazza Jr. and Robert G. Eccles. They put forward a new model of corporate transparency involving a set of global generally accepted accounting principles; home-grown, consistently applied industry specific standards for measuring and reporting performance; and company specific information. In order to restore stakeholder confidence in companies, they propose the incorporation of three concepts to the corporate reporting supply chain. These are:

- Spirit of transparency – involves a shift of focus from managing earnings and Wall Street's expectations to objective reporting on the business' main value drivers
- Culture of accountability – everyone connected with the corporate reporting supply chain is personally accountable for his or her actions and duties
- People of integrity – Corporate transparency and accountability can only be achieved through a personal commitment to integrity

These suggestions are a combination of external and self regulatory initiatives which will require a fundamental shift in the current corporate management and reporting culture. In the short term, implementing the proposals will involve investment outlays and this will add to the already soaring costs of doing business. Therefore, the issue of increased costs is another implication arising from poor quality of reporting. This issue is significant when poor quality of environmental reporting becomes synonymous with a lack of due diligence in terms of a company's environmental risk exposure; a point that is being championed by the Association of British Insurers who now require a disclosure of CSR risk exposure before granting insurance to companies.

From within the US oil industry, the Enron disaster has led to calls for more stringent governmental regulations as evidenced by The Coalition for Energy

Market Integrity & Transparency's (EMIT) call for a full investigation into likely natural gas and electricity price manipulation abuses by marketer-speculators. This call was due to information obtained about Enron's activities. As already indicated, the gross lack of transparency and accountability in Enron's reporting practices were largely responsible for its successful multi-year deception of stakeholders. This failing, together with Shell's material reserve restatement and the industry's lack of credibility in environmental matters underscore the growing interest and importance being placed on the quality of the oil industry's annual environmental CSR reports, and on its corporate governance structures, as means of restoring stakeholders' confidence.

Poor corporate reporting also has implications for the market value of oil companies. According to Pamela Cohen Kalafut, a leading corporate valuation expert, more than half of a company's value derives from intangible elements such as brand equity and strategy execution. For stakeholders to understand a company's strategy and the metrics by which management measures the strategy's success, they must be conveyed through effective channels of communication such as annual reports. A lack of stakeholder empathy for its corporate strategy will not bode well for a company as it might lead to a possible lack of confidence in its governance structures, and act as a disincentive to potential investors; with adverse effect on the company's market value.

However, not all oil companies subscribe to the view that they have a social responsibility or commitment. In a talk on May 7, 2002, Rene Dahan, ExxonMobil's executive vice-president said, "a fundamental role of business is to help create prosperity…….business enterprises are at base neither philanthropic nor peacekeeping organisations". These views are shared by Olav Fjell, President and CEO, Statoil ASA, and by ChevronTexaco chairman and CEO, Dave J. O'Reilly. However, O'Reilly conceded that oil companies have a crucial role in raising difficult issues such as good governance to transparency to equitable sharing of revenues with their partners. He described these issues as those 'which the world community is demanding action be taken by both governments and business'. Any action taken in this regard will need to be made known to the

world community and the effectiveness of such communication will be largely dependent on the quality of corporate reporting.

Social responsibility, including environmental sustainability issues, is becoming a cornerstone of the oil industry's evolving new paradigm on corporate governance and accountability. This has been linked to the growing stakeholder activist movements who are using their influence, as investors, customers, employees and suppliers to affect board behaviour by creating corporate governance standards of excellence, filing shareholder resolutions, and organising a boycott of a company's products. Companies which have responded to these groups are regarded as demonstrating accountability and are rewarded by being included in the growing number of mutual funds or stock indices of companies with good CSR record. Reacting to these movements involves the adoption of legitimising strategies which must be effectively communicated, possibly through clear and transparent annual report disclosures. Conversely, perceived risk on CSR issues can lead to investor flight and difficulty in obtaining credit, a situation of particular concern to oil companies given the increasing competition for capital in the industry.

Summary

From the above, it is clear that the quality of the industry's environmental reporting has considerable implications for its corporate governance. The oil industry is looked upon as an industry that is striving to live up to society's expectations in the area of environmental sustainability. It may thus be classified as an industry in need of legitimising in order to protect its brand name and secure its long term viability. To successfully do this, its means of communication must be effective. As voluntary corporate disclosures in annual reports are acknowledged to be the most common form of corporate communication, these reports must be of a high quality if they are to be effective in enabling oil companies to benefit from the advantages that proper corporate accountability and transparency entail.

Chapter 6
CONCLUSION

Using the GRI reporting requirements as a benchmark, this dissertation set out to evaluate the quality of environmental CSR reporting within the oil industry. A secondary aim was to determine the impact, if any, of selected corporate characteristics on the quality of environmental disclosure in that industry. To achieve these objectives, it was necessary to explore the theoretical rationale for voluntary corporate disclosure, and to also make the case for the oil industry's unfavourable global stakeholder perception, so as to show how and why the disclosure theories affect the industry, and emphasise the importance, for the industry, to achieve a high quality of environmental reporting.

The stakeholder and legitimacy theories are the more popularly cited basis for rationalising the voluntary corporate disclosure phenomenon. They contend that companies respond to external stimuli in the form of stakeholders and relevant publics. Communication forms a crucial aspect of this response and it generally takes the form of annual reports and other types of voluntary corporate disclosure. The need for legitimisation through effective communication by oil companies is underlined by the industry's negative reputation in terms of environmental sustainability and human health; and in terms of its perceived lack of transparency and stakeholder accountability. Thus, environmental reports are a critical part of the oil industry's attempts to restore and enhance stakeholder and investor confidence. Based on these theories, the higher the quality of reporting, the more successful the industry's legitimising strategy is presumed to be and the higher its stakeholder influence. Such influence may manifest itself in the form of increased market value and share price, as well as in the industry's position as a preferred employer of choice.

Based on a mixture of the positivistic and phenomenological methodologies and on statistical analyses, the quality of the environmental reports of thirty-four oil companies was evaluated. This evaluation was followed by an investigation of the impact of selected corporate characteristics on the quality of the reports. Overall, the quality of reporting was found to be low with well over half of the sampled

companies scoring below 45% on the GRI evaluation test (**Tables 4 and 5**). Disclosure was particularly poor in the areas of environmental performance and impact of corporate sustainability activities. Of the six selected corporate characteristics, only two were found to have an impact on the quality of the environmental reports. Among the reasons put forward to explain these poor results are the newness of CSR environmental reporting; the flexible and voluntary nature of the GRI reporting requirements; and the cynicism of the US about the causes of the problems relating to environmental sustainability. Further discussion of the above results together with suggested reasons have been included in chapter five. That chapter concluded with a discussion of the corporate governance implications, for the oil industry, of the quality of its CSR environmental report.

Although the results obtained from the above tests suggest a poor quality of environmental reporting within the oil sector, further tests are required before a definitive conclusion can be reached. This dissertation did not consider the veracity of the disclosure. Nor did it ascertain the completeness of the reports vis-à-vis a company's environmental performance and activities. Also, the dissertation evaluated the reports for one year only. Only by undertaking a multi-year evaluation can a reliable trend be established; and only then can a definitive statement be made about the quality of oil industry's environmental reporting.

Recommendations

Finally, to improve the level of reporting, the GRI guidelines may have to be more closely linked to corporate financial performance. The advantages of corporate compliance must be clearly demonstrated by stressing the link between compliance and sustained market value, increase in market share, and any improvement in performance as a result of unabated stakeholder approval and patronage.

A further recommendation relates to the currently flexible nature of the GRI requirements. They may have to be less flexible than they currently are, and may need to be supported by regulations and laws for them to become established and

accepted. More definite guidance should be provided on relevant key performance indicators so as to help companies in gathering the appropriate information as cost-efficiently as possible; a step that should help to make compliance less costly and more attractive.

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TABLE 1 - World proven crude oil reserves by country, 1999–2003

Table

World proven crude oil reserves by country, 1999–2003 *(m b)*

	1999	2000	2001	2002	2003	% change 03/02
North America	**26,468.8**	**26,900.9**	**27,101.1**	**27,167.0**	**27,200.0**	**0.1**
Canada[1]	4,703.8	4,855.9	4,655.1	4,490.0	4,500.0	0.2
United States	21,765.0	22,045.0	22,446.0	22,677.0	22,700.0	0.1
Latin America	**123,790.6**	**119,669.6**	**123,999.4**	**116,627.4**	**116,437.5**	**–0.2**
Argentina	3,071.0	2,974.0	2,878.0	2,820.0	3,193.0	13.2
Brazil	8,153.0	8,465.0	8,496.0	9,805.0	10,602.0	8.1
Colombia	2,290.0	1,970.0	1,840.0	1,800.0	1,500.0	–16.7
Ecuador	3,040.0	2,600.0	4,693.0	4,621.0	4,621.0	–
Mexico	28,260.0	24,384.0	25,425.0	17,196.0	16,040.0	–6.7
Venezuela	76,848.1	76,848.1	77,685.0	77,307.0	77,226.2	–0.1
Others	2,128.6	2,428.5	2,982.4	3,078.4	3,255.3	5.7
Eastern Europe	**77,686.7**	**80,586.7**	**80,217.4**	**86,190.5**	**88,290.5**	**2.4**
Former USSR	75,832.0	78,732.0	78,832.0	84,832.0	86,932.0	2.5
Others	1,854.7	1,854.7	1,385.4	1,358.5	1,358.5	–
Western Europe	**18,843.1**	**18,032.6**	**18,128.3**	**18,267.5**	**18,385.9**	**0.6**
Denmark	1,069.3	1,069.3	1,113.3	1,347.0	1,277.0	–5.2
Italy	621.8	621.8	621.8	621.7	621.7	–
Norway	10,850.0	10,125.0	10,271.0	10,265.0	10,447.4	1.8
United Kingdom	5,153.3	5,002.8	4,930.0	4,715.0	4,665.0	–1.1
Others	1,148.8	1,213.7	1,192.2	1,318.8	1,374.9	4.3
Middle East	**678,736.9**	**694,705.9**	**698,813.3**	**730,966.3**	**735,866.3**	**0.7**
IR Iran	93,100.0	99,530.0	99,080.0	130,690.0	133,250.0	2.0
Iraq	112,500.0	112,500.0	115,000.0	115,000.0	115,000.0	–
Kuwait	96,500.0	96,500.0	96,500.0	96,500.0	99,000.0	2.6
Oman	5,700.0	5,800.0	5,900.0	5,700.0	5,600.0	–1.8
Qatar	3,700.0	13,157.0	15,207.0	15,207.0	15,207.0	–
Saudi Arabia	262,784.0	262,766.0	262,697.0	262,790.0	262,730.0	–
Syrian Arab Republic	2,500.0	2,500.0	2,500.0	3,150.0	3,150.0	–
United Arab Emirates	97,800.0	97,800.0	97,800.0	97,800.0	97,800.0	–
Others	4,152.9	4,152.9	4,129.3	4,129.3	4,129.3	–
Africa	**84,258.4**	**92,415.2**	**95,876.5**	**101,004.3**	**105,507.2**	**4.5**
Algeria	11,314.0	11,314.0	11,314.0	11,314.0	11,800.0	4.3
Angola	5,050.0	5,972.0	6,500.0	8,900.0	8,900.0	–
Egypt	3,500.0	3,700.0	3,700.0	3,700.0	3,700.0	–
Gabon	2,565.0	2,420.0	2,400.0	2,370.0	2,370.0	–
SP Libyan AJ	29,500.0	36,000.0	36,000.0	36,000.0	39,126.0	8.7
Nigeria	29,000.0	29,000.0	31,506.0	34,349.0	35,254.9	2.6
Others	3,329.4	4,009.2	4,456.5	4,371.3	4,356.3	–0.3
Asia and Pacific	**53,558.8**	**52,132.5**	**47,043.9**	**45,885.0**	**45,862.3**	**–**
Australia	2,895.0	2,895.0	3,500.0	3,500.0	3,500.0	–
Brunei	1,350.0	1,350.0	1,350.0	1,350.0	1,350.0	–
China	32,500.0	30,600.0	24,900.0	23,700.0	23,700.0	–
India	4,970.0	5,290.0	5,510.0	5,580.0	5,580.0	–
Indonesia	5,201.0	5,122.6	5,094.6	4,721.8	4,721.8	–
Malaysia	3,420.0	3,420.0	3,000.0	3,000.0	3,000.0	–
Others	3,222.8	3,454.9	3,689.3	4,033.2	4,010.5	–0.6
Total world	**1,063,343.3**	**1,084,443.4**	**1,091,180.0**	**1,126,108.0**	**1,137,549.8**	**1.0**
OPEC	818,247.0	840,537.7	847,883.6	881,678.8	891,115.9	1.1
OPEC percentage	*77.0*	*77.5*	*77.7*	*78.3*	*78.3*	

Notes: Figures as at year-end. Totals may not add up due to independent rounding. Revisions have been made throughout the time series.
1. Data refers to conventional crude oil.

http://www.opec.org/Publications/AB/pdf/AB002003.pdf

TABLE 2 - Major Oil Spills

2002 November	Spain	Prestige carrying 20 million gallons (70,000 metric tons) of fuel oil broke up off the Spanish coast.
2001 January	Ecuador	Ecuadorean-registered ship Jessica, spilled 175,000 gallons of diesel and bunker oil into the sea off the Galapagos Islands.
2000 June	South Africa	Some 1,400 tonnes of heavy fuel oil leaked from the bulk carrier Treasure off Cape Town, affecting penguins on Dassen and Robben Islands.
2000 January	Brazil	A ruptured pipeline spewed about 340,000 gallons of heavy oil into Guanabara Bay, Rio de Janeiro.
1999 December	France	The stern of the Maltese tanker Erika sank off the northwest of Brittany after splitting in two, spilling 25,000 tonnes of viscous fuel oil.
1997 December	Sea of Japan	Japan Russian tanker Nakhodka spilled 19,000 tonnes of oil after breaking in two in the Sea of Japan.
1996 February	UK	UK Liberian-registered Sea Empress hit rocks near Milford Haven, Wales, spilling 72,000 tonnes of oil.
1994 October	Portugal	Portugal Panamanian tanker, Cercal, spilled about 2,000 tonnes of crude into the sea after striking a rock near Leixoes harbour, in Oporto.
1994 March	United Arab Emirates	UAE 15,900 tonnes of crude oil leaked into the Arabian Sea after the Panamanian-flagged Seki collided with the UAE tanker Baynunah 10 miles off the UAE port of Fujairah.
1994 March	Thailand	About 105,000 gallons of diesel fuel spilled into the sea four miles off the eastern Sriracha coast after oil tanker Visahakit 5 and a cargo ship collided.
1993 January	UK	The tanker Braer hit rocks near the coast of the Shetland Islands and spilled its cargo of 85,000 tonnes of crude oil.
1992 December	Spain	Greek tanker Aegean Sea ran aground and broke in two near La Coruna spilling most of its 80,000 tonne cargo of oil.
1992 September	Indonesia	Liberian-registered tanker Nagasaki Spirit collided with container Ocean Blessing in the Malacca Straits, spilling some 12,000 tonnes of crude.
1991 May	Angola/Liberia	A Liberian-registered supertanker, ABT Summer, leaked 260,000 tonnes of oil after an explosion off Angola causing an oil slick 17 nautical miles by three.

(compiled by George Draffan; website: http://www.endgame.org/oilspills.htm)

TABLE 2 - Major Oil Spills

1991 April	Italy	The Haven spilled more than 50,000 tons of oil off Genoa in Italy.
1991 January	Persian Gulf	Iraq released about 460 million gallons of crude oil into the Persian Gulf during the Gulf War.
1990 February	USA	American Trader leaked 300,000 gallons of crude oil, polluting Bosa Chica, one of southern California's biggest nature preserves.
1989 March	USA	Exxon Valdez grounded and spilled 10 million gallons (38,800 tons) of crude oil into Prince William Sound in Alaska.
1989 December	Morrocco	After explosions and a fire Iranian tanker Kharg-5 was abandoned spilling 70,000 tonnes of crude oil, endangering the coast and oyster beds at Oualidia.
1983 August	South Africa	Fire broke out on the Spanish tanker Castillo de Bellver and 175.6m gallons of light crude burnt off the coast at Cape Town. Fire broke out on the the Castillo de Bellver and its cargo of 252,000 tonnes of oil burnt.
1979 July	Trinidad	160,000 tons of crude oil spilled after a collision off Tobago between the Atlantic Empress and the Aegean Captain.
1978 March	France	220,000 tons of crude oil spilled after Amoco Cadiz ran aground near Portsall ; the slick eventually covered 125 miles of Breton coast.
1977 February	Northern Pacific	Liberian-registered Hawaiian Patriot caught fire in the Northern Pacific spilling 30.4m gallons.
1976 December	USA	Argo Merchant ran aground off Nantucket Island Massachusetts, spilling 7.7m gallons of oil and causing a slick 100 miles long and 60 miles wide.
1972 December	Oman	After a collision with Brazilian tanker Horta Barbosa the South Korean tanker Sea Star spilled about 35.3m gallons of crude into the Gulf of Oman.
1970 March	Sweden	15.3m gallons of oil spilled in a collision involving the Othello in Tralhavet Bay.
1967 March	UK	The Torrey Canyon spilled 119,000 tons of crude off the Scilly Islands (Cornwall) in the UK.

Sources: **http://www.sky.com/skynews/article/0,,30200-1070965,00.html ; http://news.bbc.co.uk/2/hi/europe/2491317.stm**

(compiled by George Draffan; website: http://www.endgame.org/oilspills.htm)

TABLE 3 - List of sampled oil companies

Name of company		Ticker symbol		
Integrated Global (Major) Companies		LSE	NYSE	
Amerada Hess Corp.			AHC	
BP plc		BP		
ChevronTexaco Corp.	**		CVX	2003 update report read together with full 2002 CSR report
ConocoPhillips Co.			CoP	
ENI SpA			ENI S.p.A.	
ExxonMobil Corp.			XOM	
Kerr-McGee Corp.			KMG	
Marathon Oil Corp.			MRO	
Murphy Oil Corp.			MUR	
Occidental Petroleum Corp.			OXY	
Petro-Canada			PCZ	
Shell (Royal Dutch / Shell group)		SHEL LN	SC US / RD	
Total			TOT	
Additional non-US Companies				
Cairn Energy plc		CNE		
Canadian Natural Resources Ltd.			CNQ	
EnCana Corp.			ECA	
Lukoil Oil Co.		LKOD		
Nexen Inc.		NXY		
Norsk Hydro ASA		NHY		
PetroKazakhstan		PKZ	PKZ	
Premier Oil plc	**	PMO		2002 CSR is the latest available report
Repsol YPF			REP	
Talisman Energy Inc.			TLM	
Tullow Oil plc		TLW		
Additional Independent US Companies				
Anadarko Petroleum Corp.			APC	
Apache Corp.			APA	
Burlington Resources Inc.			BR	
Devon Energy Corp.			DVN	
EOG Resources Inc.			EOG	
Newfield Exploration Co.			NFX	
Pioneer Natural Resources Co.			PXD	
Pogo Producing Co.			PPP	
Unocal Corp.			UCL	
Vintage Petroleum Inc.			VPI	

Legend:
LSE - London Stock Exchange
NYSE - New York Stock Exchange

TABLE 4 EVALUATION MATRIX (GRI SCORE MATRIX)

Environmental Reporting Matrix

Questions based on GRI core indicators

All reports are for 2003, except ** for 2002

	Company - Ticker Symbol								
	AHC	BP	** CVX	CoP	ENI S.p.A.	XOM	KMG	MRO	MUR
1. Vision and Strategy:									
1.1Statement of vision and strategy on contribution to sustainable development	1	1	1	1	1	1	1	1	1
1.2 CEO Statement of commitment to sustainability / report highlights	1	1	1	1	0	1	0	0	1
SUBTOTAL 1	**2**	**2**	**2**	**2**	**1**	**2**	**1**	**1**	**2**
2. Profile:									
2.1 Organisational / Operational Structure	1	1	1	1	1	1	1	1	1
2.3 Stakeholder identification / relationship	1	1	0	1	1	0	1	1	0
2.4 Scope / Profile of CSR report	1	1	1	1	1	1	0	0	1
SUBTOTAL 2	**3**	**3**	**2**	**3**	**3**	**2**	**2**	**2**	**2**
3. Governance Structure / Management Systems:									
3.1 Composition / expertise of Board and Major committees	1	1	1	1	1	1	1	1	1
3.2 Percentage of independent / unrelated non-executive board members	1	1	1	0	0	0	0	0	0
3.3 Identification / Management of programs / policies on environmental performance	1	1	1	1	1	1	1	0	1
3.4 Linkages between executive pay and organisational performance	1	0	0	0	1	1	0	0	1
3.5 Organisational structure identifying key management personnel	1	1	1	1	1	1	1	1	1
3.6 Mission and value statements, internal codes of conduct, environmental policies	1	1	1	1	1	1	1	1	1
3.7 Policies relating to measurement and improvement of management quality	0	0	0	0	0	1	1	0	0
3.8 Policies / processes for **shareholder** participation / involvement	1	0	0	0	0	0	1	0	0
3.9 Status of certification of environmental standards (e.g.independent reviewer; ISO 14001)	1	1	1	1	1	0	1	0	0
3.10 Explanation of policies on precautionary principle / risk mngt. approach	0	1	1	0	0	0	0	1	1
3.11 Environmental codes / voluntary initiatives endorsed by company	1	1	1	1	1	1	1	0	1
3.12 Principal industry / business association / advocacy group memberships	0	1	1	1	1	1	1	0	1
3.13 Supply Chain / Outsourcing policies	0	0	0	0	0	1	0	0	0
3.14 Approach to management of environmental impact of its activities	1	1	1	1	1	1	1	1	1
3.15 Policies relating to decisions about location of operations	0	1	0	1	1	0	0	0	0
3.16 Policies relating to its environmental performance	1	1	1	1	1	1	1	1	1
SUBTOTAL 3a	**11**	**12**	**11**	**10**	**11**	**11**	**11**	**6**	**10**
Stakeholder Engagement:									
3.17 Basis for selecting and identifying major stakeholders	1	1	0	1	1	0	0	1	0
3.18 Approaches to and frequency of stakeholder consultation	1	1	0	0	1	0	0	0	0
3.19 Type of information generated by stakeholder consultation	1	1	0	0	1	0	0	0	0
3.20 Use of stakeholder information	1	1	0	0	1	0	0	0	0
SUBTOTAL 3b	**4**	**4**	**0**	**1**	**4**	**0**	**0**	**1**	**0**
4. Environmental Performance:									
4.1 Describe total non-water materials use by type / definition of materials	0	1	0	0	0	0	0	0	0
4.2 Report % materials used that are waste from external sources (industrial / recycled items)	0	1	0	0	0	0	0	0	0
4.3 Report on all energy sources for own operations (in joules)	0	1	1	0	1	0	0	0	0
4.4 Report energy sources used for production / delivery of energy products to externals	0	1	1	0	1	0	0	0	0
4.5 Initiatives promoting use of renewable energy / energy efficiency	1	1	1	0	0	1	0	0	0
4.6 Report indirect energy use e.g. travel, product lifecycle management	0	1	0	0	0	0	0	0	0
4.7Total water use including recycling and reuse of water	0	1	0	0	1	0	0	0	0
4.8 Water sources / ecosystems significantly affected by production processes	1	1	1	0	0	0	0	0	0
4.9 Annual withdrawals of ground and surface water	0	1	0	0	1	0	0	0	0
4.10 Report size / location land in bio-diversity rich habitat	1	1	1	1	0	1	0	1	1
4.11 Impact of production processes on bio-diversity / protected habitat	1	1	1	1	0	1	0	1	1
4.12 Policies on protecting / restoring degraded native eco-systems / species	1	1	1	1	0	1	0	0	1
4.13 Report Greenhouse gas emissions (in tonnes of CO_2 equivalent)	1	1	1	1	1	1	0	0	0
4.14 Use, emissions of ozone-depleting substances in tonnes of CFC-11 equivalents	0	1	0	0	0	0	0	0	0
4.15 NO_X SO_X, Methane and other significant air emissions by type	1	1	1	1	1	1	0	0	1
4.16 Details of hazardous materials / chemicals associated with company	1	1	0	0	0	0	0	0	1
4.17 Policy on waste management (recycling, recovery, landfilling)	1	1	1	0	1	1	1	0	0
4.18 Discharges to water by type (e.g oil seeps, spills)	1	1	1	0	0	0	0	0	0
4.19 Details of water sources / ecosystems / habitat affected by discharges	1	1	1	0	0	0	0	0	0
4.20 Significant oil, chemical, fuel spills and impact on environment	1	1	1	0	0	1	0	1	1
4.21 Significant environmental impacts of main products and services	1	1	1	1	0	0	0	1	1
4.22 Percentage of product weight / volume reclaimable / reclaimed after use	1	1	0	0	0	0	1	0	0
4.23 Suppliers' compliance with Environment, Health, and Safety codes	0	0	0	0	0	1	0	0	0
4.24 Significant environmental impact of transportation employed	0	0	0	0	0	0	0	0	0
4.25 Total environmental expenditure by type	0	1	1	0	0	1	0	0	0
4.26 Details of fines / non-compliance with environmental issues	1	1	1	0	0	1	0	0	0
SUBTOTAL 4	**15**	**24**	**16**	**6**	**7**	**11**	**2**	**4**	**7**
5. 'In Accordance' reporting option:									
5.1 Inclusion of a GRI contents index?	0	1	0	0	0	0	0	0	0
5.2 Report is consistent with GRI principles	0	1	0	0	0	0	0	0	0
5.3 Report includes 'in accordance' statement signed by CEO	0	1	0	0	0	0	0	0	0
SUBTOTAL 5	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
6. Incremental reporting option:									
6.1 Description of how GRI guidelines informed report development	1	1	1	0	0	0	0	0	0
SUBTOTAL 6	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL POINTS SCORED	**36**	**49**	**32**	**22**	**26**	**26**	**16**	**14**	**21**
PERCENTAGE OF TOTAL SCORED	**65.45%**	**89.09%**	**58.18%**	**40.00%**	**47.27%**	**47.27%**	**29.09%**	**25.45%**	**38.18%**

Environmental Reporting Matrix

Questions based on GRI core indicators

All reports are for 2003, except ** for 2002

	Company - Ticker Symbol								
	OXY	PCZ	SHEL (LSE)	TOT	CNE	CNQ	ECA	LKOD	NXY
1. Vision and Strategy:									
1.1Statement of vision and strategy on contribution to sustainable development	1	1	1	1	1	0	1	1	1
1.2 CEO Statement of commitment to sustainability / report highlights	1	1	1	1	1	0	0	0	1
SUBTOTAL 1	**2**	**2**	**2**	**2**	**2**	**0**	**1**	**1**	**2**
2. Profile:									
2.1 Organisational / Operational Structure	1	1	1	1	1	1	1	1	1
2.3 Stakeholder identification / relationship	1	1	1	1	1	0	1	0	1
2.4 Scope / Profile of CSR report	1	1	1	1	1	0	0	0	1
SUBTOTAL 2	**3**	**3**	**3**	**3**	**3**	**1**	**2**	**1**	**3**
3. Governance Structure / Management Systems:									
3.1 Composition / expertise of Board and Major committees	1	1	1	1	1	1	1	1	1
3.2 Percentage of independent / unrelated non-executive board members	1	1	1	1	1	0	1	0	1
3.3 Identification / Management of programs / policies on environmental performance	1	1	1	1	1	1	0	1	1
3.4 Linkages between executive pay and organisational performance	0	0	1	0	0	0	0	0	0
3.5 Organisational structure identifying key management personnel	1	1	1	1	1	1	1	1	1
3.6 Mission and value statements, internal codes of conduct, environmental policies	1	1	1	1	1	1	1	1	1
3.7 Policies relating to measurement and improvement of management quality	1	1	1	0	0	0	0	0	0
3.8 Policies / processes for **shareholder** participation / involvement	0	0	1	0	0	0	0	1	0
3.9 Status of certification of environmental standards (e.g.independent reviewer; ISO 14001)	1	1		1	1	0	0	1	1
3.10 Explanation of policies on precautionary principle / risk mngt. approach	1	1	0	1	1	1	1	0	1
3.11 Environmental codes / voluntary initiatives endorsed by company	1	1	1	1	1	1	1	1	1
3.12 Principal industry / business association / advocacy group memberships	1	0	1	1	0	1	1	0	0
3.13 Supply Chain / Outsourcing policies	1	0	1	1	1	0	1	1	0
3.14 Approach to management of environmental impact of its activities	1	1	1	1	1	1	0	1	1
3.15 Policies relating to decisions about location of operations	1	0	1	1	1	0	1	0	0
3.16 Policies relating to its environmental performance	1	1	1	1	1	1	0	1	1
SUBTOTAL 3a	**14**	**11**	**14**	**13**	**12**	**9**	**9**	**10**	**10**
Stakeholder Engagement:									
3.17 Basis for selecting and identifying major stakeholders	0	1	1	1	1	1	1	0	1
3.18 Approaches to and frequency of stakeholder consultation	0	1	1	1	1	1	1	0	1
3.19 Type of information generated by stakeholder consultation	0	1	1	1	1	1	1	0	1
3.20 Use of stakeholder information	0	1	1	1	1	1	1	0	1
SUBTOTAL 3b	**0**	**4**	**4**	**4**	**4**	**4**	**4**	**0**	**4**
4. Environmental Performance:									
4.1 Describe total non-water materials use by type / definition of materials	0	0	0	0	0	0	0	0	0
4.2 Report % materials used that are waste from external sources (industrial / recycled items)	0	0	0	0	0	0	0	0	0
4.3 Report on all energy sources for own operations (in joules)	0	1	1	1	1	0	0	1	0
4.4 Report energy sources used for production / delivery of energy products to externals	0	1	0	1	1	0	0	1	0
4.5 Initiatives promoting use of renewable energy / energy efficiency	1	1	1	1	0	0	1	1	1
4.6 Report indirect energy use e.g. travel, product lifecycle management	0	0	0	0	0	0	0	0	0
4.7Total water use including recycling and reuse of water	0	1	1	1	1	0	1	0	1
4.8 Water sources / ecosystems significantly affected by production processes	0	1	0	1	1	0	0	0	1
4.9 Annual withdrawals of ground and surface water	0	0	0	0	0	0	0	0	0
4.10 Report size / location land in bio-diversity rich habitat	1	1	1	1	1	0	1	0	0
4.11 Impact of production processes on bio-diversity / protected habitat	1	1	1	1	1	0	0	0	0
4.12 Policies on protecting / restoring degraded native eco-systems / species	1	1	1	1	1	1	1	1	1
4.13 Report Greenhouse gas emissions (in tonnes of CO_2 equivalent)	1	1	1	1	1	1	1	0	1
4.14 Use, emissions of ozone-depleting substances in tonnes of CFC-11 equivalents	0	0	1	1	0	0	0	0	0
4.15 NO_X, SO_X, Methane and other significant air emissions by type	1	1	1	1	1	1	0	0	1
4.16 Details of hazardous materials / chemicals associated with company	1	0	1	1	0	0	0	0	0
4.17 Policy on waste management (recycling, recovery, landfilling)	1	1	1	1	1	0	0	1	1
4.18 Discharges to water by type (e.g oil seeps, spills)	1	1	1	1	1	0	0	0	1
4.19 Details of water sources / ecosystems / habitat affected by discharges	0	1	0	1	1	0	0	0	1
4.20 Significant oil, chemical, fuel spills and impact on environment	1	1	1	1	1	0	0	0	1
4.21 Significant environmental impacts of main products and services	1	1	1	1	1	1	0	1	1
4.22 Percentage of product weight / volume reclaimable / reclaimed after use	0	0	0	1	0	1	0	0	1
4.23 Suppliers' compliance with Environment, Health, and Safety codes	1	0	1	1	1	0	1	1	0
4.24 Significant environmental impact of transportation employed	0	0	0	1	0	0	0	0	0
4.25 Total environmental expenditure by type	1	1	0	0	0	0	0	1	0
4.26 Details of fines / non-compliance with environmental issues	1	1	1	0	1	0	0	0	
SUBTOTAL 4	**14**	**17**	**16**	**20**	**16**	**5**	**6**	**8**	**12**
5. 'In Accordance' reporting option:									
5.1 Inclusion of a GRI contents index?	0	0	1	1	0	0	0	0	0
5.2 Report is consistent with GRI principles	0	0	0	1	0	0	0	0	0
5.3 Report includes 'in accordance' statement signed by CEO	0	0	1	0	0	0	0	0	0
SUBTOTAL 5	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**
6. Incremental reporting option:									
6.1 Description of how GRI guidelines informed report development	0	0	1	1	0	0	0	0	1
SUBTOTAL 6	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**1**
TOTAL POINTS SCORED	**33**	**37**	**42**	**45**	**37**	**19**	**22**	**20**	**32**
PERCENTAGE OF TOTAL SCORED	**60.00%**	**67.27%**	**76.36%**	**81.82%**	**67.27%**	**34.55%**	**40.00%**	**36.36%**	**58.18%**

Environmental Reporting Matrix

Questions based on GRI core indicators

All reports are for 2003, except ** for 2002

	Company - Ticker Symbol								
	NHY	PKZ	PMO **	REP	TLM	TLW	APC	APA	BR
1. Vision and Strategy:									
1.1Statement of vision and strategy on contribution to sustainable development	0	0	1	1	1	0	1	0	1
1.2 CEO Statement of commitment to sustainability / report highlights	1	0	1	1	1	0	0	0	0
SUBTOTAL 1	**1**	**0**	**2**	**2**	**2**	**0**	**1**	**0**	**1**
2. Profile:									
2.1 Organisational / Operational Structure	1	1	1	1	1	1	1	1	1
2.3 Stakeholder identification / relationship	1	1	1	1	1	0	0	0	0
2.4 Scope / Profile of CSR report	0	0	1	1	1	0	0	0	0
SUBTOTAL 2	**2**	**2**	**3**	**3**	**3**	**1**	**1**	**1**	**1**
3. Governance Structure / Management Systems:									
3.1 Composition / expertise of Board and Major committees	1	1	1	1	1	1	1	1	1
3.2 Percentage of independent / unrelated non-executive board members	0	1	1	0	1	1	0	0	1
3.3 Identification / Management of programs / policies on environmental performance	0	1	1	1	1	0	1	1	1
3.4 Linkages between executive pay and organisational performance	0	0	1	0	1	0	1	1	0
3.5 Organisational structure identifying key management personnel	1	1	1	1	1	1	1	1	1
3.6 Mission and value statements, internal codes of conduct, environmental policies	1	1	1	1	1	1	1	1	1
3.7 Policies relating to measurement and improvement of management quality	0	1	0	0	0	0	0	0	0
3.8 Policies / processes for **shareholder** participation / involvement	0	0	1	1	0	0	0	0	0
3.9 Status of certification of environmental standards (e.g.independent reviewer; ISO 14001)	1	0	1	1	1	1	0	0	0
3.10 Explanation of policies on precautionary principle / risk mngt. approach	0	1	1	1	1	0	0	0	0
3.11 Environmental codes / voluntary initiatives endorsed by company	1	0	1	0	1	0	1	0	1
3.12 Principal industry / business association / advocacy group memberships	1	0	1	0	0	0	0	0	0
3.13 Supply Chain / Outsourcing policies	0	0	1	1	0	0	0	1	0
3.14 Approach to management of environmental impact of its activities	1	1	1	1	1	0	1	1	1
3.15 Policies relating to decisions about location of operations	0	0	0	0	1	0	0	0	0
3.16 Policies relating to its environmental performance	1	0	1	1	1	0	1	0	1
SUBTOTAL 3a	**8**	**8**	**14**	**10**	**12**	**5**	**8**	**7**	**8**
Stakeholder Engagement:									
3.17 Basis for selecting and identifying major stakeholders	0	0	1	0	1	0	0	0	0
3.18 Approaches to and frequency of stakeholder consultation	0	0	1	0	1	0	0	0	0
3.19 Type of information generated by stakeholder consultation	0	0	1	0	1	0	0	0	0
3.20 Use of stakeholder information	0	0	1	0	1	0	0	0	0
SUBTOTAL 3b	**0**	**0**	**4**	**0**	**4**	**0**	**0**	**0**	**0**
4. Environmental Performance:									
4.1 Describe total non-water materials use by type / definition of materials	1	0	1	1	0	0	0	0	0
4.2 Report % materials used that are waste from external sources (industrial / recycled items)	0	0	0	0	0	0	0	0	0
4.3 Report on all energy sources for own operations (in joules)	1	0	0	1	0	0	0	0	0
4.4 Report energy sources used for production / delivery of energy products to externals	1	0	1	1	0	0	0	0	0
4.5 Initiatives promoting use of renewable energy / energy efficiency	1	0	0	1	1	0	0	0	0
4.6 Report indirect energy use e.g. travel, product lifecycle management	0	0	0	0	0	0	0	0	0
4.7Total water use including recycling and reuse of water	1	0	1	1	0	0	0	0	0
4.8 Water sources / ecosystems significantly affected by production processes	1	0	1	1	1	0	0	0	0
4.9 Annual withdrawals of ground and surface water	0	0	0	1	0	0	0	0	0
4.10 Report size / location land in bio-diversity rich habitat	1	0	0	0	0	0	0	1	0
4.11 Impact of production processes on bio-diversity / protected habitat	1	0	0	1	1	0	0	1	0
4.12 Policies on protecting / restoring degraded native eco-systems / species	1	0	1	1	1	0	0	1	0
4.13 Report Greenhouse gas emissions (in tonnes of CO_2 equivalent)	1	0	1	1	1	0	0	0	0
4.14 Use, emissions of ozone-depleting substances in tonnes of CFC-11 equivalents	0	0	1	0	0	0	0	0	0
4.15 NO_x, SO_x, Methane and other significant air emissions by type	1	0	1	1	1	0	0	0	0
4.16 Details of hazardous materials / chemicals associated with company	1	0	0	1	0	0	0	0	0
4.17 Policy on waste management (recycling, recovery, landfilling)	1	0	0	1	1	0	0	0	0
4.18 Discharges to water by type (e.g oil seeps, spills)	1	0	1	1	1	0	0	0	0
4.19 Details of water sources / ecosystems / habitat affected by discharges	1	0	1	1	1	0	0	0	0
4.20 Significant oil, chemical, fuel spills and impact on environment	1	0	1	1	1	0	0	0	0
4.21 Significant environmental impacts of main products and services	1	0	1	1	1	0	0	0	1
4.22 Percentage of product weight / volume reclaimable / reclaimed after use	1	0	0	1	1	0	1	0	0
4.23 Suppliers' compliance with Environment, Health, and Safety codes	0	0	1	1	0	0	0	0	0
4.24 Significant environmental impact of transportation employed	0	0	0	0	0	0	0	0	0
4.25 Total environmental expenditure by type	0	0	0	1	0	0	0	0	0
4.26 Details of fines / non-compliance with environmental issues	0	1	0	0	0	0	0	0	0
SUBTOTAL 4	**18**	**1**	**13**	**20**	**12**	**0**	**1**	**3**	**1**
5. 'In Accordance' reporting option:									
5.1 Inclusion of a GRI contents index?	0	0	1	1	1	0	0	0	0
5.2 Report is consistent with GRI principles	0	0	1	1	1	0	0	0	0
5.3 Report includes 'in accordance' statement signed by CEO	0	0	0	0	0	0	0	0	0
SUBTOTAL 5	**0**	**0**	**2**	**2**	**2**	**0**	**0**	**0**	**0**
6. Incremental reporting option:									
6.1 Description of how GRI guidelines informed report development	0	0	1	1	1	0	0	0	0
SUBTOTAL 6	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**
TOTAL POINTS SCORED	**29**	**11**	**39**	**38**	**36**	**6**	**11**	**11**	**11**
PERCENTAGE OF TOTAL SCORED	**52.73%**	**20.00%**	**70.91%**	**69.09%**	**65.45%**	**10.91%**	**20.00%**	**20.00%**	**20.00%**

Environmental Reporting Matrix

Questions based on GRI core indicators

All reports are for 2003, except ** for 2002

Company - Ticker Symbol

	DVN	EOG	NFX	PXD	PPP	UCL	VPI	*CONTROL*
1. Vision and Strategy:								
1.1Statement of vision and strategy on contribution to sustainable development	1	0	0	0	0	1	1	1
1.2 CEO Statement of commitment to sustainability / report highlights	0	0	0	0	0	1	0	1
SUBTOTAL 1	**1**	**0**	**0**	**0**	**0**	**2**	**1**	**2**
2. Profile:								
2.1 Organisational / Operational Structure	1	1	1	1	1	1	1	1
2.3 Stakeholder identification / relationship	0	0	0	0	1	1	1	1
2.4 Scope / Profile of CSR report	0	0	0	0	0	1	0	1
SUBTOTAL 2	**1**	**1**	**1**	**1**	**2**	**3**	**2**	**3**
3. Governance Structure / Management Systems:								
3.1 Composition / expertise of Board and Major committees	1	1	1	0	1	1	1	1
3.2 Percentage of independent / unrelated non-executive board members	0	1	0	1	0	1	0	1
3.3 Identification / Management of programs / policies on environmental performance	1	1	0	0	0	1	0	1
3.4 Linkages between executive pay and organisational performance	0	1	0	0	0	1	0	1
3.5 Organisational structure identifying key management personnel	1	1	1	1	1	1	1	1
3.6 Mission and value statements, internal codes of conduct, environmental policies	1	1	1	1	0	1	0	1
3.7 Policies relating to measurement and improvement of management quality	0	1	1	0	1	1	0	1
3.8 Policies / processes for **shareholder** participation / involvement	0	0	0	0	0	0	0	1
3.9 Status of certification of environmental standards (e.g.independent reviewer; ISO 14001)	0	0	0	0	0	0	0	1
3.10 Explanation of policies on precautionary principle / risk mngt. approach	0	0	0	0	0	1	0	1
3.11 Environmental codes / voluntary initiatives endorsed by company	1	0	1	1	0	1	0	1
3.12 Principal industry / business association / advocacy group memberships	1	0	0	0	0	1	0	1
3.13 Supply Chain / Outsourcing policies	0	0	0	0	0	0	0	1
3.14 Approach to management of environmental impact of its activities	1	0	0	0	0	1	0	1
3.15 Policies relating to decisions about location of operations	0	0	0	0	0	0	0	1
3.16 Policies relating to its environmental performance	1	1	0	0	0	1	0	1
SUBTOTAL 3a	**8**	**8**	**5**	**4**	**3**	**12**	**2**	**16**
Stakeholder Engagement:								
3.17 Basis for selecting and identifying major stakeholders	0	0	0	0	0	0	0	1
3.18 Approaches to and frequency of stakeholder consultation	0	0	0	0	0	1	0	1
3.19 Type of information generated by stakeholder consultation	0	0	0	0	0	1	0	1
3.20 Use of stakeholder information	0	0	0	0	0	1	0	1
SUBTOTAL 3b	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**4**
4. Environmental Performance:								
4.1 Describe total non-water materials use by type / definition of materials	0	0	0	0	0	0	0	1
4.2 Report % materials used that are waste from external sources (industrial / recycled items)	0	0	0	0	0	0	0	1
4.3 Report on all energy sources for own operations (in joules)	0	0	0	0	0	0	0	1
4.4 Report energy sources used for production / delivery of energy products to externals	0	0	0	0	0	0	0	1
4.5 Initiatives promoting use of renewable energy / energy efficiency	0	0	0	0	0	1	0	1
4.6 Report indirect energy use e.g. travel, product lifecycle management	0	0	0	0	0	0	0	1
4.7Total water use including recycling and reuse of water	0	0	0	0	0	0	0	1
4.8 Water sources / ecosystems significantly affected by production processes	0	0	0	0	0	0	0	1
4.9 Annual withdrawals of ground and surface water	0	0	0	0	0	0	0	1
4.10 Report size / location land in bio-diversity rich habitat	1	0	0	0	0	1	0	1
4.11 Impact of production processes on bio-diversity / protected habitat	1	0	0	0	0	1	0	1
4.12 Policies on protecting / restoring degraded native eco-systems / species	1	0	0	0	0	1	0	1
4.13 Report Greenhouse gas emissions (in tonnes of CO_2 equivalent)	0	0	0	0	0	1	0	1
4.14 Use, emissions of ozone-depleting substances in tonnes of CFC-11 equivalents	0	0	0	0	0	0	0	1
4.15 NO_X SO_X, Methane and other significant air emissions by type	0	0	0	0	0	1	0	1
4.16 Details of hazardous materials / chemicals associated with company	0	0	0	0	0	0	0	1
4.17 Policy on waste management (recycling, recovery, landfilling)	0	0	0	0	0	0	0	1
4.18 Discharges to water by type (e.g oil seeps, spills)	0	0	0	0	0	0	0	1
4.19 Details of water sources / ecosystems / habitat affected by discharges	0	0	0	0	0	0	0	1
4.20 Significant oil, chemical, fuel spills and impact on environment	0	0	0	0	0	1	0	1
4.21 Significant environmental impacts of main products and services	1	0	0	0	0	1	0	1
4.22 Percentage of product weight / volume reclaimable / reclaimed after use	0	0	0	0	0	0	0	1
4.23 Suppliers' compliance with Environment, Health, and Safety codes	0	0	0	0	0	0	0	1
4.24 Significant environmental impact of transportation employed	0	0	0	0	0	0	0	1
4.25 Total environmental expenditure by type	0	0	0	0	0	1	0	1
4.26 Details of fines / non-compliance with environmental issues	0	0	0	0	0	1	0	1
SUBTOTAL 4	**4**	**0**	**0**	**0**	**0**	**10**	**0**	**26**
5. 'In Accordance' reporting option:								
5.1 Inclusion of a GRI contents index?	0	0	0	0	0	0	0	1
5.2 Report is consistent with GRI principles	0	0	0	0	0	0	0	1
5.3 Report includes 'in accordance' statement signed by CEO	0	0	0	0	0	0	0	1
SUBTOTAL 5	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
6. Incremental reporting option:								
6.1 Description of how GRI guidelines informed report development	0	0	0	0	0	0	0	1
SUBTOTAL 6	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
TOTAL POINTS SCORED	**14**	**9**	**6**	**5**	**5**	**30**	**5**	**55**
PERCENTAGE OF TOTAL SCORED	**25.45%**	**16.36%**	**10.91%**	**9.09%**	**9.09%**	**54.55%**	**9.09%**	**100.00%**

TABLE 5 - SUMMARY OF GRI SCORES (FROM TABLE 4)

	Ticker Symbol	Total Score	%
BP plc	BP	49	89.09%
Total	TOT	45	81.82%
Shell (Royal Dutch / Shell Group)	SHEL (LSE)	42	76.36%
Premier Oil plc	PMO	39	70.91%
Repsol YPF	REP	38	69.09%
Petro-Canada	PCZ	37	67.27%
Cairn Energy plc	CNE	37	67.27%
Amerada Hess Corp.	AHC	36	65.45%
Talisman Energy Inc.	TLM	36	65.45%
Occidental Petroleum Corp.	OXY	33	60.00%
ChevronTexaco Corp	CVX	32	58.18%
Nexen Inc.	NXY	32	58.18%
Unocal Corp.	UCL	30	54.55%
Norsk Hydro ASA	NHY	29	52.73%
ENI SpA	ENI S.p.A.	26	47.27%
ExxonMobil Corp	XOM	26	47.27%
ConocoPhillips	CoP	22	40.00%
EnCana Corp	ECA	22	40.00%
Murphy Oil Corp	MUR	21	38.18%
Lukoil Oil Co	LKOD	20	36.36%
Canadian Natural Resources Ltd	CNQ	19	34.55%
Kerr-McGee Corp	KMG	16	29.09%
Marathon Oil Corp	MRO	14	25.45%
Devon Energy Corp	DVN	14	25.45%
PetroKazakhstan	PKZ	11	20.00%
Anadarko Petroleum Corp	APC	11	20.00%
Apache Corp	APA	11	20.00%
Burlington Resources Inc.	BR	11	20.00%
EOG Resources Inc	EOG	9	16.36%
Tullow oil plc	TLW	6	10.91%
Newfield Exploration Co	NFX	6	10.91%
Pioneer Natural Resources Co	PXD	5	9.09%
Pogo Producing Co	PPP	5	9.09%
Vintage Petroleum Inc	VPI	5	9.09%

Analysis of scores

	65% and higher	>45% but < 65%	< 45%
No. of Companies	9	7	18
%	26%	21%	53%

TABLE 6 – CORPORATE CHARACTERISTICS

Name of company	LSE symbol	NYSE symbol	Economic Performance	size		Local Reporting requirements	##	Local culture and attitudes	##	Governance Structutre	Liquidity	'GRI' score
Integrated Global (Major) Companies			Profitability (Return on Assets)	2003 Operating Revenue (Local Currency)	2003 Operating Revenue (US $ bn)	Audit firm	aufit firm	Corporate Jurisdiction	corporate jurisdiction	NED/Total Directors	Quick Ratio	
Amerada Hess Corp.		AHC	6.31%	US $ 14.311	14.31	Ernst & Young	10	US	1	66.67%	0.91	36
BP plc	BP		6.61%	US $ 232.571	232.57	Ernst & Young	11	UK	2	66.67%	0.59	49
ChevronTexaco Corp.		CVX	10.03%	US $ 120.032	120.03	PwC	20	US	1	85.71%	0.93	32
ConocoPhillips Co.		CoP	6.89%	US $ 104.196	104.20	Ernst & Young	10	US	1	87.50%	0.39	22
ENI SpA		ENI S.p.A.	10.16%	Euros 51.487 bn	64.65	PwC	22	Italy	2	87.50%	0.67	26
ExxonMobil Corp.		XOM	14.18%	US $ 237.054	237.05	PwC	20	US	1	72.73%	0.91	26
Kerr-McGee Corp.		KMG	3.88%	US $ 4.185	4.19	Ernst & Young	10	US	1	90.00%	0.55	16
Marathon Oil Corp.		MRO	8.33%	US $ 40.042	40.04	PwC	20	US	1	90.91%	0.93	14
Murphy Oil Corp.		MUR	7.92%	US $ 5.275	5.28	KPMG	30	US	1	90.91%	0.87	21
Occidental Petroleum Corp.		OXY	10.31%	US $ 9.326	9.33	KPMG	30	US	1	83.33%	0.73	33
Petro-Canada		PCZ	13.15%	Cdn $ 12.209	9.43	Deloitte & Touche	43	CANADA	1	83.33%	1.00	37
Shell (Royal Dutch / Shell group)	SHEL LN	SC US / RD	8.61%	US $ 268.892	268.89	PwC / KPMG	21	UK / NETHERLANDS	2	84.21%	0.46	42
Total		TOT	8.87%	Euros 104.652 bn	131.41	Ernst & Young / KPMG	14	FRANCE	2	94.12%	0.98	45
Additional non-US Companies												
Cairn Energy plc	CNE		9.96%	£ 0.155814 bn	0.28	Ernst & Young	11	UK	2	54.55%	1.39	37
Canadian Natural Resources Ltd.		CNQ	11.35%	Cdn $ 5.972	4.61	PwC	23	CANADA	1	80.00%	0.63	19
EnCana Corp.		ECA	11.33%	Cdn $ 10.216	7.89	PwC	23	CANADA	1	87.50%	0.78	22
Lukoil Oil Co.	LKOD		17.05%	US $ 22.118	22.12	KPMG	35	RUSSIA	2	63.64%	1.04	20
Nexen Inc.	NXY		11.25%	Cdn $ 2.908	2.25	Deloitte & Touche	43	CANADA	1	90.91%	1.43	32
Norsk Hydro ASA	NHY		6.05%	NOK 171.782 bn	25.61	Deloitte & Touche	46	NORWAY	2	77.78%	0.88	29
PetroKazakhstan	PKZ	PKZ	44.74%	US $ 1.117	1.12	Deloitte & Touche	43	CANADA	1	83.33%	1.99	11
Premier Oil plc	PMO		6.59%	£ 0.2577 bn	0.46	Ernst & Young	11	UK	2	60.00%	1.53	39
Repsol YPF		REP	6.91%	Euros 3.86 bn	4.85	Deloitte & Touche	47	SPAIN	2	64.29%	0.97	38
Talisman Energy Inc.		TLM	9.40%	Cdn $ 5.295 bn	4.09	Ernst & Young	13	CANADA	1	66.67%	0.70	36
Tullow Oil plc	TLW		6.29%	£ 0.132364 bn	0.24	Deloitte & Touche / Robert J. Kidney & Co.	41	UK	2	40.00%	1.51	6
Additional Independent US Companies												
Anadarko Petroleum Corp.		APC	8.00%	US $ 5.122	5.12	KPMG	30	US	1	80.00%	0.68	11
Apache Corp.		APA	12.78%	US $ 4.190299	4.19	Ernst & Young	10	US	1	84.62%	0.89	11
Burlington Resources Inc.		BR	12.89%	US $ 4.311	4.31	PwC	20	US	1	80.00%	1.53	11
Devon Energy Corp.		DVN	12.82%	US $ 7.352	7.35	KPMG	30	US	1	75.00%	1.10	14
EOG Resources Inc.		EOG	12.29%	US $ 1.537352	1.54	Deloitte & Touche	40	US	1	75.00%	0.65	9
Newfield Exploration Co.		NFX	9.94%	US $ 1.016986	1.02	PwC	20	US	1	72.73%	0.55	6
Pioneer Natural Resources Co.		PXD	13.94%	US $ 1.2986	1.30	Ernst & Young	10	US	1	91.67%	0.30	5
Pogo Producing Co.		PPP	12.48%	US $ 1.161996	1.16	PwC	20	US	1	85.71%	1.83	5
Unocal Corp.		UCL	7.46%	US $ 6.539	6.54	PwC	20	US	1	90.00%	0.81	30
Vintage Petroleum Inc.		VPI	-11.04%	US $ 0.756327	0.76	Ernst & Young	10	US	1	62.50%	0.85	5

Sources:

Information on Return on Assets and Quick Ratio obtained from Thomson Analytics database on November 23, 2004. website = http://banker.analytics.thomsonib.com/ta/

Return on Assets is defined as (Net Income before Preferred Dividends + ((Interest Expense on Debt-Interest Capitalized) * (1-Tax Rate))) / Last Year's Total Assets * 100

Quick Ratio is defined as (Cash & Equivalents + Receivables (Net)) / Current Liabilities-Total

All other information obtained from company website

Colour code:

companies scoring 75% and higher

companies scoring > 50% but < 75%

companies scoring < 50%

Legend:

= Dummy values:

Corporate Jurisdiction:
US and Canada are in North America = 1
All other jurisdictions are in Europe = 2

Audit firm:
Ernst & Young = 1 PwC = 2
KPMG = 3 Deloitte & Touche = 4

Country:
US = 0 Italy = 2 Russia = 5 Spain = 7
UK = 1 Canada = 3 Norway = 6 France = 4

TABLE 7 – Regression Analysis

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	Quick Ratio, corporate jurisdictio n, audit firm, 2003 Revenue (US $ bn), NED/Total Directors, Profitability (RoA)[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Total scores

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.612[a]	.375	.236	11.444

a. Predictors: (Constant), Quick Ratio, corporate jurisdiction, audit firm, 2003 Revenue (US $ bn), NED/Total Directors, Profitability (RoA)

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2119.759	6	353.293	2.697	.035[a]
	Residual	3536.271	27	130.973		
	Total	5656.029	33			

a. Predictors: (Constant), Quick Ratio, corporate jurisdiction, audit firm, 2003 Revenue (US $ bn), NED/Total Directors, Profitability (RoA)

b. Dependent Variable: Total scores

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-6.147	20.296		-.303	.764
	Profitability (RoA)	-.172	.330	-.100	-.521	.607
	2003 Revenue (US $ bn)	.060	.033	.338	1.841	.077
	audit firm	.004	.187	.004	.020	.984
	corporate jurisdiction	12.181	5.465	.430	2.229	.034
	NED/Total Directors	.155	.196	.149	.791	.436
	Quick Ratio	1.047	6.368	.032	.164	.871

a. Dependent Variable: Total scores