

The Materiality of Social, Environmental and Corporate Governance Issues to Equity Pricing

**11 Sector Studies
by Brokerage House Analysts at the
Request of the UNEP Finance Initiative
Asset Management Working Group**



UNEP Finance Initiative
Innovative financing for sustainability

2004 Report

The Materiality of Social, Environmental and Corporate Governance Issues to Equity Pricing

**11 Sector Studies
by Brokerage House Analysts at the
Request of the UNEP Finance Initiative
Asset Management Working Group**

Commissioned by

The United Nations Environment Programme Finance Initiative (UNEP FI)
Asset Management Working Group (AMWG)

AMWG Member Firms

Acuity Investment Management, Canada
BNP Paribas Asset Management, France
Calvert Group Ltd., USA
Citigroup Asset Management, USA
Groupama Asset Management, France
Morley Fund Management, United Kingdom
Nikko Asset Management, Japan
Old Mutual Asset Managers, South Africa
San Paolo IMI Asset Management, Italy
Storebrand Investments, Norway
ABN AMRO Asset Management, Brazil
HSBC Asset Management, Europe

Copyright June 2004: UNEP Finance Initiative

Foreword: United Nations Environment Programme

Asset managers and financial analysts are crucial players in our capital markets.

The work presented in this summary report, prepared by the UNEP Finance Initiative, is a coming together of a group of powerful institutions – representing both the mainstream asset management and brokerage house communities – that places environmental, social and corporate governance criteria at the heart of capital market and investment considerations.

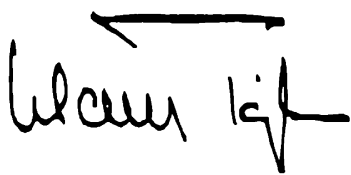
The examination of climate change, corporate trust and governance, labour rights and occupational and public health, amongst other issues, across eight industry and business sectors, provides a unique look at how key market players integrate sustainability considerations in their equity valuations.

A critical next step will be the uptake and implementation of the wide-ranging recommendations in the study by investors, analysts, and public sector policy-makers.

The publication of this report is timely. Clearly, the unpaid environmental debt that exists at the heart of our markets is unsustainable. Increasingly, we are seeing more severe environmental and social impacts – at the global, regional and local level – stemming from the reluctance of markets to embrace sustainability, a concept so well captured by the “People, Planet, Prosperity” ethos.

The industry sector reports prepared by brokerage house analysts show that long-term protection of shareholder value rests upon rigorous integration of environmental, social and corporate governance issues in the valuation process. Too many analysts and financial institutions tend to insufficiently acknowledge and appreciate environmental, social and corporate governance issues.

The results of this project show that such a bias may expose investors and companies to unnecessary risk. Environmental, social and corporate governance thinking must therefore be fully integrated into our market, investment and board room considerations by those that wish to create the foundation for, and then realise, long-term shareholder value.



Klaus Töpfer

Executive Director

United Nations Environment Programme

Introduction from the Chairs

An increasing number of institutional investors are becoming interested in approaches to asset management that explicitly include environmental, social and corporate governance criteria or metrics, either for ethical reasons or where they are or may become relevant to investment performance.

While there are increasing pressures for investment managers to address these issues, however, they have generally received little consideration from brokerage house analysts and policy-makers.

The twelve members of our group, along with many other large financial institutions worldwide, have signed or are considering signing a United Nations Environment Programme declaration that pledges us to integrate these issues into our products and operations.

In April 2003 in response to investor demand and in fulfilment of our obligations as signatories to this pledge we constituted an Asset Management Working Group (AMWG) within the United Nations Environment Programme Finance Initiative (UNEP FI) to explore and document the materiality of environmental, social and corporate governance considerations and criteria as they relate to the portfolio management of mutual and other institutional funds.

From August to October of 2003 we invited more than 50 major stock brokerage firms with whom we do a significant amount of business to be responsive to our request for an analysis of seven industry sectors as defined by Morgan Stanley Capital International (see box page 6 for project timeline).

The analysts were requested to identify specific environmental and social criteria likely to be material for company competitiveness and reputation in those sectors. We also asked the analysts to the extent possible to quantify their potential impact on stock price. As a pointer, we noted that in our own experience the following issues/criteria were likely to have financially material impacts:

- Climate change
- Occupational and public health issues / diseases
- Human labour and political rights
- Issues of corporate trust and corporate governance

By April 2004 we had received 11 reports from 9 brokerage houses. The results of the research were telling:

- There was agreement that environmental, social and corporate governance issues affect long-term shareholder value. In some cases those effects may be profound.
- The majority of analysts noted difficulties in comparative analysis due to the range of reporting practices for environmental, social and corporate governance risks and opportunities.
- Financial research was greatly aided by clear government positions with respect to environmental, social and corporate governance issues. In some cases analysts were not able to provide in-depth reports due to a lack of certainty regarding government policy.

These results provide strong independent support for the thesis that effective management of these issues will contribute to growing shareholder value. We therefore feel that they should be taken into account in fundamental financial analysis and thus investment considerations. In light of these findings:

We urge corporate managers and board directors:

- To include environmental, social and corporate governance reporting in their annual reports and financial statements.

- To urge the trustees of their employee pension funds to invest pension fund assets in a manner that reflects the strong links between social, environmental and financial performance.

We also urge governments to:

- Recognise that in general, current definitions of trustee fiduciary duty, financial materiality and corporate disclosure requirements do not incorporate or ensure the integration of environmental, social and corporate governance issues into fundamental company analysis.
- Ensure that the assets of their public employee pension funds are invested in a manner that reflects the strong links between social, environmental and financial performance.

We therefore call on regulatory bodies to:

- Update their regulations of public and private trustee fiduciary duty and of financial materiality to include consideration of material environmental, social and corporate governance issues.
- Update financial disclosure regulations for companies and stock exchanges to require specific disclosure of environmental, social and corporate governance criteria.

Based on our own experience and the results of this research we see environmental, social and corporate governance issues as being an integral part of successful management in the modern World. We therefore strongly feel that they should be taken into account in financial analysis and in investment management.

Starting in 2004 our group is planning to begin tracking global integration of environmental, social and corporate governance criteria into the work of investors, asset managers and capital markets on an annual basis. We will do this using a ten-point list of indicators described in the upcoming activities section of this report.

These indicators are based on both the results of the broker research, our own experience and on the recommendations of the UN Global Compact high-level initiative on best practice in financial analysis.

We conclude with the following points:

1. Investors and trustees would be well advised to take note of the findings, results and recommendations from the sector studies.
2. We especially thank the analysts who produced the reports for their hard work, leadership and innovative spirit.
3. We thank all the members of the Asset Management Working Group for their dedication to the completion of this project.
4. We thank the UNEP FI secretariat for its steadfast support, enthusiasm, and professionalism.

Sincerely,



Mr. Carlos Joly

Co-Chair
UNEP FI Asset Management Working Group
Advisor to the CEO
Storebrand Investments, Norway



Mr. Vincent Zeller

Co-Chair
UNEP FI Asset Management Working Group
General Manager and Chief Investment Officer
Groupama Asset Management, France

Box 1: Project Timeline

1. April 2003: Start

- Twelve asset management firms launch a working group under UNEP FI to explore and document the materiality of environmental and social considerations and criteria as they relate to the portfolio management of mutual funds, pension funds and other institutional funds.

2. May - September 2003: Planning and Invitation

- Identify the heads of research and brokerage house analysts from more than 50 brokerage houses with whom the group does significant business.
- Agree on and send a letter to the above firms requesting special sector reports (without financial compensation) on extra financial issues in seven sectors.

3. October - December 2003: Response

- 14 reports from 11 firms confirmed.

4. January - April 2004: Broker Research

- Four reports withdrawn from project.
- One report added.
- One sector changes from apparel to aviation.

5. May - June 2004: Comment and Analysis

- Final output: 11 brokerage house analyst reports.
- Group compiles comments on reports.
- Results compiled in collaboration with the UN Global Compact.

6. June 2004: Launch

- At UN Global Compact Leaders Summit

Project Findings

1. Environmental, social and corporate governance criteria affect shareholder value both in the short and long term.

- Analysts agreed that environmental, social and corporate governance criteria impact both positively and negatively on long-term shareholder value. In some cases these effects may be profound. It follows that research to determine the financial materiality of these criteria should use longer time spans than is currently the norm for financial analysis.

2. Governments can reduce barriers to environmental, social and corporate governance analysis by mandating and standardising the inclusion of these criteria in national and international financial disclosure frameworks.

- Most reports and AMWG members agreed that financial analysis of these criteria would be made easier if governments, via their financial regulators, clarify and/or enforce existing or develop new financial disclosure regulations and standards to specifically include disclosure of these criteria where they have been shown to be material.
- Definitions of fiduciary duty and financial materiality within these frameworks should also be revised to incorporate consideration of environmental, social and corporate governance criteria.
- The Global Reporting Initiative should ensure that its reporting guidelines are relevant for and communicated to the financial community and financial regulators.

3. Innovative techniques are being developed to perform financial analyses of environmental, social and corporate governance criteria in response to growing investor demand.

Examples include:

■ Surveys

Surveys were used to gather information on and rank company performance for environmental, social and corporate governance criteria not normally disclosed in company financial statements.

- It is possible that no set of financial indicators would show any link to performance if analysed using a small number of companies. We therefore encourage analysts to use larger numbers of companies when performing analysis of this nature.

Examples:

Goldman Sachs Global Energy Research

Introducing the Goldman Sachs Energy Environmental and Social Index

West LB Equity Markets Pan-European Equities

Insurance and Sustainability: Playing with Fire

■ Portfolio analysis

The best analyses used financial metrics to compare best from worst performers for a given set of environmental social and corporate governance criteria against existing stock portfolios. The comparison helped analysts evaluate the financial impact of chosen criteria for a given industry sector. This is an important step beyond identifying potential criteria for analysis and determining best and worst performers.

Example:

Deutsche Bank Global Equity Research

Beyond the Numbers: Corporate Governance: Implication for Investors

■ **Scenario analysis**

Analysts used scenario analysis to evaluate potential impacts of upcoming regulation on companies. This analysis was also used when government positions on a particular environmental, social and corporate governance issue were clearly articulated policy or position papers.

Example:

UBS Global Equity Research,

European Emissions Trading Scheme - Bonanza or Bust?

4. Brokerage houses in the European Union are increasingly willing and able to respond to demand for environmental, social and corporate governance research.

- We received a 20% response rate to our invitation to provide this research. In the future we expect that growing awareness of the financial materiality of these criteria will drive demand for further research. Specifically, increasing numbers of institutional investors, fund managers and financial institutions will need to explicitly request and reward research on environmental, social and corporate governance criteria.

5. In response to the AMWG Materiality research report, brokerage houses in the United States and Canada will likely be interested in the findings of their European counterparts, and as a result may pursue exploring this type of research in their future sector reports.

- No North American brokerage houses responded positively to our invitation. Those that responded to the AMWG declined on the basis of a perceived difficulty in analysis due to barriers associated with inadequate disclosure of these criteria (see Finding number two), internal restructuring, or a lack of research capacity.

Policy-makers and investors may be the most effective catalysts for North American research firms to incorporate social, environmental and corporate governance indicators into their work.

Comparative Analysis of Reports

This table summarises the key findings from a comparative analysis of the broker reports and AMWG commentaries.

| Key Findings | | | Comments |
|---|---|--|---|
| Geographic Focus* of reports | 46% EU | 27% Global | Lack of North American participation is evident. *20% overall response rate to invitation. |
| Were ESC criteria Relevant to long-term shareholder value? | 100% yes | | Clear signal that ESC criteria are important for investors with a long term focus. |
| Did the report concentrate on the risks or profits possible from ESC criteria? | 64% both | 36% risk only | ESC criteria affect both company risk and return. Risks are identified more frequently than returns with risk being considered in 91% of reports. |
| Did the report make Buy/sell/hold recommendations for companies? | 64% no | 36% yes* | The majority of reports did not make specific recommendations. However even the prospect of regulation or the establishing of government positions made scenario analyses possible that in turn facilitated specific recommendations. *3 of the yes reports were EU ETS analyses. |
| Did the report use a survey? | 73% no | 27% yes* | Surveys were important for gathering information on ESC criteria as they are often not reported in a standardized format suited for financial analysis. This appeared to increase the research burden and impede absolute sector analysis.** *all surveys were relative. The launching of the Goldman Sachs Energy Environmental and Social index is notable for its commitment to continue to report on these issues. **Report 2 is notable both for its ability to collect extra-financial data from publicly available sources and compare it with traditional financial criteria and data in order to reach a specific, and positive, conclusion. |
| What main method of analysis did the reports use? | 36% scenario analysis | 27% survey based scoring | Scenario analysis was used to estimate the impact of potential legislation. Reports 2 and 3 are interesting as they compile ESC data and analyse it using traditional financial metrics. |
| What were the key regulatory initiatives making ESC criteria material? | 55% Kyoto protocol | 46% EU ETS | Regulatory certainty aids in the choice of winners and losers. Analysts confidently responded to potential regulation using scenario analysis. Other notable regulation mentioned by analysts included: fiduciary duty, congruence principle for emerging markets |
| What other drivers exist for ESC criteria? | 27% SRI funds | | NGOs, non-regulatory government positions* and transparency initiatives were also highlighted. *King II, UK Aviation White Paper |
| Other notable common results | 64% government initiatives and regulation | 27% increasing and standardizing disclosure. | Quality and depth of analysis of a market may be correlated with certainty in that market. It follows that clear regulations or government positions coupled with standardized and specific disclosure requirements and reporting systems for ESC criteria will facilitate more in depth analysis. |

Companion Report: The United Nations Global Compact Financial Sector High-Level Initiative on Best-Practices in Financial Analysis

The UN Global Compact has launched, in tandem with the release of this project, a report outlining how to better integrate environmental, social and governance issues into financial analysis, asset management and securities brokerage.

Compiled with the participation of financial institutions, stakeholders, and the financial support of the Swiss Government the report, “Who Cares Wins - Connecting Financial Markets to a Changing World”, is an important companion document to this project.

As an important component of its upcoming activities the AMWG has defined ten workable criteria for fostering and monitoring global uptake of the recommendations of the UN Global Compact and of this report. These criteria are listed in the upcoming activities section of this report.

Beginning in July 2005 the AMWG will seek to begin, using these ten criteria, tracking global uptake of the recommendations of the UN Global Compact report on best practice in financial analysis and of the UNEP FI study.

The following is an extract from the executive summary of the UN Global Compact report:

The institutions endorsing this report are convinced that in a more globalised, interconnected and competitive world the way environmental, social and corporate governance issues are managed is part of companies' overall management quality needed to compete successfully. Companies with better performance with regard to these issues can increase shareholder value by, for example, better managing risks, anticipating regulatory action or accessing new markets, while at the same time contributing to the sustainable development of the societies in which they operate.

Moreover, these issues can have a strong impact on reputation and brands, an increasingly important part of company value.

The report aims at increasing the awareness of all involved financial market actors, at triggering a broader discussion, supporting creativity and thoughtfulness in approach, rather than being prescriptive.

It also aims at contributing to more clarity about the respective roles of different market actors, including the companies, regulators, stock exchanges, investors, asset managers, brokers, analysts, accountants, financial advisers and consultants.

It therefore includes recommendations for different actors, aiming to support better mutual understanding, collaboration and constructive dialogue on these issues.

AMWG Upcoming Activities

1. Engagement with Investors.

- Convey results of the project to institutional investors, mutual funds, fixed income investors, and public and private pension funds worldwide using workshops, Internet and print outreach.

2. Monitor Global Uptake of Results.

- Beginning in July 2005 the AMWG will seek to begin tracking global uptake of the recommendations of the UN Global Compact report on best practice in financial analysis and of the UNEP FI study.
- To facilitate accurate analysis the members have distilled the UN Global Compact financial sector recommendations into a workable ten-point set of criteria.

3. Launch of a Second Round of this Project.

Date to be determined. Interested asset managers and brokerage houses can contact the AMWG secretariat by emailing materiality@unepfi.net.

Ten Point Indicators for Capital Markets

The UNEP FI AMWG will monitor implementation along the lines of the following indicators. The AMWG encourages the promotion of the practices embodied in these indicators.

Investors

1 Government and multilateral agency pension funds that integrate consideration of environmental, social and corporate governance criteria into their investment mandates where appropriate.

2 Trustees and their selection consultants who integrate environmental, social and corporate governance issues into their formulation of investment mandates and selection of investment managers.

3 Investors who specify their proxy voting guidelines on environmental, social and corporate governance matters.

Asset Managers

4 Top management and boards that take a leadership role.

5 Brokerage houses that are appropriately equipped to integrate environmental, social and

corporate governance issues into fundamental company analysis.

6 Asset Management firms that are actively requesting brokerage house research on environmental, social and corporate governance criteria in fundamental analysis.

7 Asset management firms whose performance and incentive systems reward environmental, social and corporate governance research.

Capital Markets

8 Stock exchanges that include environmental, social and corporate governance criteria in their listing particulars for companies.

9 Accounting bodies and rating agencies that integrate environmental, social and corporate governance criteria into their frameworks.

10 Global Reporting Initiative interaction with local and international investment research bodies.

Report Extracts with AMWG Commentary

This section consists of extracts from the submitted reports followed by comments on the reports from the AMWG. The firms and report titles are as follows:

1. ABN AMRO Equities United Kingdom page 14
Pharmaceuticals and SRI
2. Deutsche Bank Global Equity Research page 17
Beyond the Numbers: Corporate Governance: Implication for Investors
3. Deutsche Securities South African Equity Research page 19
No Evidence to Link Share Ratings with Good Corporate Citizenship...Yet
4. Dresdner Kleinwort Wasserstein Europe / Equity page 21
Utilities: Emission trading - Carbon Derby Part II: And they're off
5. Dresdner Kleinwort Wasserstein UK / Europe / Equity page 24
Transport: Aviation emissions: Another cost to bear
6. Goldman Sachs Global Energy Research page 26
Introducing the Goldman Sachs Energy Environmental and Social Index
7. HSBC page 30
European Utilities II
8. NikkoCitigroup Japan Equity Strategy page 33
The Global Environment and Socially Responsible Investment: Environmental Technologies Fuelling Zones of Growth
9. Nomura Japanese Equity Markets page 38
Corporate social responsibility (CSR) in the nonlife insurance sector
10. UBS Global Equity Research page 41
European Emissions Trading Scheme - Bonanza or Bust?
11. West LB Equity Markets Pan-European Equities page 47
Insurance and Sustainability: Playing with Fire

Report One

| | |
|-----------------|---|
| Sector | Pharmaceuticals |
| Title | Pharmaceuticals and SRI |
| Firm | ABN AMRO |
| Region | Europe |
| Date | February 2004 |
| Analysts | Benjamin Yeoh |
| Quote | “Given the links between minimising CSR risks and minimising business risks, we think moving towards accountability on the triple bottom line will make better companies and, it is hoped, a better world.” |
| Extract | We give an overview of the challenges, opportunities and risks inherent in corporate social responsibility (CSR) vis a vis the large pharmaceutical companies. |

Scope of report

In attempting to value CSR, this is given within a context of socially responsible investment (SRI) but also with regard to the ‘non-financial risks’ facing any investment analyst.

What’s the point of looking at CSR and pharma?

There are broadly two good reasons for, in our view, looking at CSR:

- To improve stock picking ability and to make more money
- To contribute to a sustainable world

We believe both factors should make your life better! But can looking at CSR really help with making money? We believe it can.

While the ‘holy grail’ of empirically linking CSR performance to financial or stock performance is something we believe is most likely to never be found (for a whole host of reasons discussed later), we believe good CSR minimises business risks.

We argue that while many CSR risks are not easily quantifiable, they are certainly present, and managements that assess and minimise those risks are less at risk than those that do not. Managing these risks well could be taken as a proxy for good strategic management in general.

What price you pay for that management and company is another question. Moreover, understanding these business risks should help analysts understand a company more fully.

What does a pharma company do?

Taking a simple view, a pharmaceutical company:

- Researches, discovers and develops new drugs
- Then manufactures, sells and markets drugs under a patent

The current business model revolves around discovering drugs for commercial diseases, trying to commercialise them as quickly and efficiently as possible with the minimum amount of drop outs and then selling them under the protection of a patent for as long as possible.

How to look at the CSR and non-financial risks

We see CSR risks as being grouped into five broad areas:

- Corporate governance
- Ethical considerations
- Socio-political considerations
- Environmental and manufacturing
- Regulation and legal

We examine the risks associated with each factor in more detail later on in this report. We go on to propose that if the risks are scored on a relative basis between companies, then better investment decisions can be made on a risk/return basis.

Conclusion Pricing ‘non-financial risk’ is difficult. It may be beyond our present valuation metrics to give it an exact quantifiable value. However, there are strong theoretical grounds for measuring these risks on a company-relative basis and this may help to value the risks of a company relative to its peers more accurately.

We also suggest ways of developing those metrics.

Furthermore, understanding CSR risks gives a deeper understanding of the company and the business threats it faces. We believe these types of risks warrant closer examination by analysts and should lead to added value in investment decisions.

Social and environmental factors affect the businesses of pharmaceutical companies, although the link is not often clear. Drug companies have come some way to better transparency and to better deal with CSR concerns.

Investors and companies have more to do. We believe developing metrics will be useful in terms of valuation tools. Companies continuing to increase transparency, increase innovation and show awareness of CSR issues are likely to be rewarded in the long term, in our view.

Moving towards more GRI-like reporting will help, but it will require developing a culture both at companies and with investors of aiming for goals socially, environmentally and economically - the triple bottom line.

Given the links between minimising CSR risks and minimising business risks, we think moving towards accountability on the triple bottom line will make better companies and, it is hoped, a better world.

AMWG

Comment The report’s outstanding feature is its identification of a broad range of ESC criteria that could be material to financial performance. It could therefore serve as a roadmap for future analysis. In contrast to many analyst reports on ESC criteria it was far stronger on social as opposed to environmental criteria.

The report suggested several approaches to rating or ranking of these issues that will also prove useful for future analysis. Indeed, we would welcome a discussion amongst the mainstream financial research community of the differences between companies as well as a comparison of individual companies according to identified criteria.

For example, we feel that these criteria could form the basis for the type of relative and absolute analysis performed in reports 2, 3, 6 and 11.

In conclusion, we feel there is considerable scope for the development of valuation techniques to put financial values on environmental, social and corporate governance criteria variables in the pharmaceuticals sector. We look forward to seeing the institutional and fund management communities use this report as a basis for requesting further research into the materiality of these criteria.

Report Two

Special Report

Governance

Title

Beyond the Numbers
Corporate Governance: Implication for Investors

Firm

Deutsche Bank

Region

Global

Date

April 2004

Analysts

Renato Grandmont
Gavin Grant
Flavia Silva

Quote

“Deutsche Bank is delighted to help support the Asset Management Working Group of the United Nations with the contribution of two highly innovative studies: one which identifies the implications of Corporate Governance standards to investment decisions in several countries, and the other which analyses sustainability issues impacting the retail sector in South Africa.

Both reports show the increasing importance that certain non-financial elements such as corporate governance and social and environmental issues have on a company's operations, providing important insights for today's investors.

Deutsche Bank Equity Research team believes that corporate governance is a critical element of equity risk and as such, deserves to be measured and considered in the investment decision making process. Our research has shown that, in general, companies with the highest quality of governance standards tend to give better return to shareholders.

Our research into sustainable development issues in the retail sector in South Africa shows the importance of social and environmental issues in this country and the direct role that the government and companies are playing. Although no direct link was found between share price performance and good corporate citizenship we believe that it is a matter of time before these two issues become directly related.”

Russell Duckworth, Global Head of Equity Research, Deutsche Bank

Extract

Corporate governance standards vary widely

We have analysed corporate governance in different markets, from emerging to developed, and have found that standards vary widely among companies of the same country. None of the analysed companies, including those in the US and UK markets, were found to have perfect governance and some companies remain far from perfect.

Governance impacts risk, profitability, and price performance

In our research, we have found a clear link between our corporate governance assessment and share price volatility, corporate profitability, and share price performance. Through these relationships, we conclude that the assessment of corporate governance standards is a valid measure of equity risk.

Investors are struggling to anticipate governance problems

Concerning equity valuations among companies in the US and the UK, we have identi-

fied a time and information gap, causing most investors to react to bad corporate governance news rather than anticipate potential problems. We also found that investors in emerging market companies tend to be more aware of governance risk, allowing them to discount that risk through equity valuations within the same market. We believe that as investors improve their ability to measure and integrate corporate governance risk into their investment decision making process in a more systematic way, corporate governance standards will likely play an increasing role in a company's valuations.

Intro

In this report we summarize some of the main conclusions of our research on the importance of corporate governance to shareholders in the United States, the United Kingdom and several emerging markets over the past few years. The analysis is based on a bottom-up approach to governance risk assessment. Note that the conclusions shown in this report are those presented in previous corporate governance reports.

The focus of our research has been to explore the implications of corporate governance for portfolio management. We identify the facts and behavioural differences impacting a company's governance standards and explore ways to integrate them into the investment process in a systematic way. We quantify and measure corporate governance standards and explore the relationships between corporate governance and risk (e.g. volatility) and their implications for profitability, stock price performance and equity valuation. With these links we can start to evaluate companies and equity portfolios by comparing their inherent corporate governance risks.

As shown in the analysis below, corporate governance standards vary dramatically from one company to the next, even within the same country. The difference in governance practices is even greater among companies in different countries. Although some of these differences are based on legal and regulatory structures, we contend that the legal and regulatory framework in which a company operates offers the minimum standards to be followed.

However, it is ultimately the company itself that decides what levels of transparency and rights it provides to shareholders. This is particularly the case for companies willing to attract global investors into their shareholder base. The corporate governance problems of the past few years, which took place in some of the most sophisticated and transparent markets in the world, exemplify that corporate governance abuses can take place in every market.

The conclusions from our work show that corporate governance standards are an important component of equity risk. As such, it must be measured and monitored.

We believe that as investors improve their ability to measure and integrate corporate governance risk into their investment decision making process in a more systematic way, corporate governance standards will likely play an increasing role in a company's valuation.

Report Three

Sector Apparel

Title Retail Sector
No evidence to link share ratings with good corporate citizenship...yet.

Firm Deutsche Securities

Region South Africa

Date 14 January 2004

Analysts Craig Sorour
Thathisihlalo Makunga

Quote “As far as SA institutional investors are concerned, our sense is that far more focus is paid towards corporate governance than to social and environmental issues. But we believe this will change. This is likely to be driven by the recently established international trend to focus on these issues and pressure from government to support corporates embracing the transformation process.”

Extract We assess in this report the key social and environmental issues durable goods and apparel retailers should be focusing on and whether their compliance (or lack of it) with “good corporate citizenship” has impacted share price performance. In doing so, we look at King 11, the recent Mining and Financial sector charters and the summit on sustainable development.

Following the political transformation that has taken place in South Africa (SA), it is clear that the economic transformation is lagging behind and government is determined to redress this. We believe this has elevated the need for SA corporates to embrace social responsibility in a manner that exceeds that of other countries. The prevalence of HIV/AIDS, and the challenges it brings adds further impetus to this need.

Our analysis shows that durable goods and apparel sector retailers have over the past five years shown significant improvement in implementing and reporting on matters of transformation, social responsibility, healthcare, environmental issues and corporate governance.

On a scale from one to 10, our scorecard shows that since 1998, the retailers have improved from 2.2 to 5.3. They have become better corporate citizens, but substantial further improvement is still required. Top scorer is Edcon (7.2), followed by Woolworths (6.6) and Truworths (6.0). Lagging are Foschini (4.5) and Mr Price (2.0), while JD Group and Ellerrine are in the midrange.

Unfortunately for the five year period under review, we were unable to conclude that there is a link between the shares' ratings and the level of compliance with good corporate citizenship.

Over the longer term, we believe that share ratings, and hence share price performance, will be strongly influenced by good corporate citizenship. In fact, we believe the survival of companies in SA is inextricably linked to their ability to meet the social changes demanded by SA's transformation process.

**AMWG
Comment**

South African society continues to distance itself from its apartheid past. Part of this process has been economic reforms with wide implications for the business community. The country is also struggling with the HIV/AIDS epidemic and has been at the forefront of governance reform. This provides a potent mix of non-financial pressures on business. If there is any country where short term societal and government pressures are in place to encourage social responsibility then South Africa is the place.

Deutsche Bank's (DB) analysts cover a sector that has not received much press attention in response to these pressures. The mining and financial services sectors have both come under the analysts spotlight with thorough analysis of the implications of the Black Economic Empowerment Bill and HIV/AIDS.

However the retailers, despite the large workforces and economic importance, have gone unnoticed. The retail sector is the most disparate sector in the South African equity market yet it comprises 4% of the country's total market capitalisation.

In its report DB has attempted to link share price performance, using PE relative ratings, to the survey results on sustainability and found no clear link. Using the PE ratios of the selected retail sector stocks relative to the broader financial and industrial stocks on the South African equity market, DB demonstrated that these retail stocks have not rerated over the 1998-2003 period.

To reassess impact on valuation, DB compared the performance of apparel companies against each other. Likewise, furniture companies against each other. For the apparel companies, the stock market seems to discount the leading company's higher sustainability score.

With furniture stocks, the market seems to be recognising a company poorly positioned compared to the rival one, though financial statement data inconsistencies could be distorting the outcome. An analysis of Price/Book relative is mixed. Accordingly, the conclusion is no link between shares' rating and the sustainability factors for the retail sector.

DB's analysis does not uncover the 'Holy Grail' – a link between social responsibility and share price premium. However the universe is small and the period chosen is a period of unprecedented political and economic change.

One element of the ranking system that is of particular interest is the inclusion of benchmarks about how companies had changed or transformed over the period chosen.

Transformation is a process that South African Society is progressing through and certainly something that the Government has encouraged both the mining and financial sector to start. It is not inconceivable that a similar process will be requested from the retail sector. A measure of 'transformation' is a useful element that demonstrates the capacity of the financial community to develop new metrics in response to changing social criteria.

Future analysis could build on this methodology by including a comparison of social and environmental issues with profitability via Return on Equity, Return on Assets and the EBITDA Margin. Overall the report was succinct and precise. It identified the catalysts for social and environment issues in the South African retail sector in a factual context collaborated by a survey methodology.

To conclude, in our view retail stocks are not homogeneous and their share price performance tends to reflect this behaviour. To this end we feel that a longer term reassessment of this relationship could yield interesting insights for investors willing to engage in a stock picking approach to investing in the sector.

Report Four

| | |
|-----------------|---|
| Sector | Utilities |
| Title | Emission Trading Carbon Derby Part II: And they're off |
| Firm | Dresdner Kleinwort Wasserstein |
| Region | Europe |
| Date | October 2003 |
| Analysts | Chris Rowland Geraint Anderson Martin Brough Julian Cepeda Ignacio Font Javier Garrido Ajay Patel Lueder Schumacher |
| Quote | "We have little doubt that certain countries will 'stretch' the interpretation of the rules to allocate more allowances than might be allocated to be strictly consistent with that country's target under the Kyoto Protocol (and the EU's 'Burden-Sharing Agreement')." |
| Extract | Europe's new CO ₂ constraint is becoming clearer to quantify. We believe it will result in CO ₂ allowances trading at 15 euro/tonne over 2005-07, rising to 25 euro/tonne over 2008-12. Notwithstanding political resistance, wholesale electricity prices look set to rise 60-70% in Germany and the UK from early 2003 levels. Moreover, progress in developing National Allocation Plans leads us to rule out various adverse outcomes and hence we are prepared to add RWE to E.ON and Scottish & Southern as certain and sizeable beneficiaries. Electrabel could be a notable gainer too. |

Our studies, Emission trading: Carbon Derby and UK power generation: Dead parrot or time bomb? both of March 2003 and Emission trading: Place your bets of April, 2003 highlighted that emission trading should be a value creation opportunity for most European power generators. As governments home in on the level of allocations, a closer picture is emerging of how carbon-constrained Europe will be. This enables us to be more precise about the price of CO₂ allowances and the impact on electricity prices, and hence on the scale of value creation.

CO₂ allowances on course for 15 euro/tonne in 2006

Europe looks set to be faced with cutting CO₂ by 60-65m tonnes per year over 2005-07. This would result in CO₂ allowances trading at 15 euro/tonne, and would see wholesale power prices pushed up by up to 10-15 euro/MWh in freely competitive markets where prices are currently below new entrant levels. This assessment assumes:

Certain countries will 'stretch' the interpretation of the number of CO₂ allowances that can be allocated whilst being 'on course' to meet their Kyoto targets.

Conversely, Germany, the UK and Sweden will allocate fewer CO₂ allowances than could be allocated whilst being on course to hit their Kyoto targets, although not so tightly as to be completely in line with tougher declared targets for CO₂ emissions.

Accession Member States are restricted by the European Commission to allocate less than 40% of the CO2 allowances that are freed up by being well below their Kyoto targets.

Valuation upside

Including the cost of CO2 allowances in 2006 power prices, as we believe is inevitable in the UK and Germany, would see wholesale prices rise by around 40%. Even allowing for end-user prices not to show the full rise in wholesale prices, EBITDA and valuations should be lifted for each of E.ON, RWE, Scottish & Southern and Electrabel.

Likelihood that CO2 allowances go above 15 euro/tonne

National allocations will set a cap on the absolute level of CO2 emissions. Faster economic growth (we assume 1.75% growth in our central case) and drier weather would make it tougher to stay within this cap. Under a feasible range of circumstances, the price for CO2 allowances could settle above 25 euro/tonne in 2005-07.

Conversely, for CO2 allowances to settle at 2 euro/tonne, coal prices would have to stabilise at US\$60/tonne and there would have to be a wet year.

Longer-term CO2 allowances heading for 25 euro/tonne.

In any case by 2008-12, Europe could be in need of cutting CO2 by at least around 100m tonnes. Despite increased abatement options, this would push CO2 allowances to an estimated 25 euro/tonne.

AMWG

Comment The Dresdner report succeeded in identifying the most critical environmental criteria facing the European electricity industry over the next decade.

These include:

- Air quality in terms of acid rain
- Global warming
- Security of supply
- Sustainability of non-renewable energy resources

The report regards carbon emission trading as the most far reaching of any initiatives in terms of both the effect on the electricity industry and attempts to quantify the impact of trading on the industry. It suggests that if trading were implemented as currently proposed wholesale electricity prices would rise by 60-70% from early 2003 levels in Germany and the UK.

Dresdner's central case scenario suggests at 15 euro/tonne, the extra cost of carbon dioxide allowances makes it economic for manufacturers to abate 60-65m tonnes in 2006. Such abatement will come from switching from coal fired to gas fired electricity generation making the incentive to cut carbon dioxide emissions greater.

However, our opinion is that manufacturers are exhibiting no inclination to make new investments before 2008. At 25 euro/tonne, the extra cost of allowances would make it economical to build new gas fired stations to substitute for coal burning from 2008 onwards.

Low carbon generators, such as CCGTs, nuclear and renewables will benefit from these changes. Coal capacity is the only potential loser by having to bear the full cost of its emissions charges. The Dresdner Report estimates a shortfall of the aggregate number of

carbon dioxide allowances of 60-65m tonnes compared to the carbon dioxide emissions “business-as-usual” scenario of the 2006 EU trading scheme. The shortfall could rise to well over 200m tonnes by 2010.

In general, the impact of these environmentally driven changes on power companies and stock prices depends on several factors:

- The fuel mix of generation between coal, gas, nuclear and renewables and the scope for reducing carbon dioxide by switching to low carbon output
- The extent of vertical integration between generation and retail, and therefore the extent to which prices are absorbed in lower retail margins
- Plans for investment in renewable technology and other low carbon options

The Dresdner report summarises the value impacts for leading quoted utilities as follows:

- RWE set to benefit more than any other utility given the large proportion of its electricity business and positioning in the German power process. RWE’s allocation of free carbon dioxide allowances will be sufficient to ensure that it has a net benefit over the coming eight years.
- Eletrabel also stands to gain as current electricity prices are below new entrant levels, including a cost of carbon dioxide emissions, while uncertainty over allowance allocations is declining.
- Iberdrola stands to gain from higher long-term wholesale power prices, but only beyond 2012.

The report aptly demonstrates the impact of the carbon dioxide emissions trading scheme on European power and gas companies despite some uncertainty in respect of the implementation challenges that lie ahead.

The report’s key lessons include the following:

- Carbon dioxide emission trading is likely to lead to higher wholesale electricity prices and higher costs for retailers of electricity,
- Residential prices will rise if these costs are passed on to customers in full,
- Governments will find it politically challenging to tolerate the inequality between the cost to consumers and the cost to the electricity industry,
- Fund Managers with a longer term investment horizon will have to factor the impact of carbon dioxide trading into their decisions on stock valuation,
- Banks and other financial institutions will act as intermediaries in carbon dioxide trading thus promoting liquidity.

Future research may wish to address such ESC criteria as fines or penalties for non-compliance, air quality, global warming, and security of supply.

Report Five

| | |
|-----------------|---|
| Sector | Aviation |
| Title | Aviation emissions: Another cost to bear |
| Firm | Dresdner Kleinwort Wasserstein (DrKW) |
| Region | UK / Europe |
| Date | November 2003 |
| Analysts | Mike Powell Rebecca Langley Mark McVicar Joel Copp-Barton |
| Quote | “On the face of it, aviation accounts for a small proportion of EU greenhouse gas (GHG) emissions. However, emissions from international flights are excluded from the official figures and take no account of radiative forcing. In reality, aviation is the fastest-growing source of greenhouse gases and stands out as a target for policymakers, particularly in countries with ambitious GHG reduction targets such as the UK.” |

Extract The environmental effects of aviation are usually broken down into four categories:

- Aircraft noise near airports
- Air quality near airports
- Surface traffic and congestion generated by airlines and their passengers
- The impact of aviation on climate change

Airlines obviously have an impact on noise levels, air quality and traffic volumes around airports but global warming is the issue at the top of the environmental agenda and hence it is the impact of aircraft emissions on climate change that is currently judged the most serious issue by policymakers.

This document focuses on the impact of aviation on climate change through the emission of greenhouse gases, the possible policy solutions and their impact on the airlines and airport operators. Aviation’s impact on climate change is at the top of the political agenda.

Aviation is the fastest-growing source of green house gases and is widely regarded as under taxed. We attach a 60% probability to an increase in the UK’s APD next year and an EU-wide emissions charge could be introduced as soon as 2005. Both measures could have a material negative impact on airline and airport earnings.

The fastest-growing source of emissions: International aviation is excluded from Kyoto and will not be included in Europe’s emissions trading structure until 2008 (and more probably 2013). In the meantime the EU or national governments are likely to tax aviation emissions. The greatest near-term risk is in the UK, where a White Paper is due this autumn and higher taxes could be the quid pro quo for more runways.

UK options: We think the UK has three policy options: introduce an all new emissions charge, do nothing before the introduction of an EU-wide charge (which could happen in 2005) or convert the existing Air Passenger Duty (APD) into an emissions charge.

Raising APD by 64-100% would cover the £1.5bn climate change costs of UK aviation.

Raising APD: Our base case assumes the short-haul and long-haul APD rates are raised by 50% and 75%, respectively (plus 64% on average). The financial impact of higher taxes is a function of price elasticities and margins: in our base case the negative earnings impact on British Airways, Easyjet and Ryanair is 17%, 15% and 10%, respectively. The airports are relatively defensive: we estimate BAA's earnings would decline by only 6%.

An EU-wide charge: The UK could use its EU presidency in 2005 to introduce an EU-wide charge, which, if set at the same levels as a UK charge, would raise 10bn euro. We estimate a negative earnings impact of over 20% for BA, Lufthansa and Iberia, over 30% for both Easyjet and Ryanair and around 80% for Air France. If an EU charge replaces APD, the impact on UK-based airlines and airports would be much diminished.

AMWG

Comment

Through this comprehensive and extremely detailed report DrKW has produced evidence that emission taxation could appear to be a major value driver in the UK aviation sector.

Dr KW pointed out that the regulatory measures have a significant financial impact on airline companies as well as passengers. This is shown through the effects of specific taxations. Projections displayed significant reductions in passenger volumes resulting from:

- Increased Air Passenger's Duty and
- EU-wide emission charge

These reductions in passenger volumes, as seen in the report, could directly decrease earnings ranging 10% to 80% for specific airline companies. To assess the value of this impact the addition of a DCF valuation model with these taxations integrated would provide constructive and functional information.

The data involved in the above scenarios thoroughly explained how the sector is going to be affected by the future regulation changes. It also included quantitative evidence on which companies' forward earnings are most vulnerable. The report does not note the material impact of climate change on individual companies' stock price.

We encourage other financial research firms to take note of this report as a basis for an extended global review and ranking of financially material issues in the airline industry, perhaps including an in depth evaluation of the broader issues mentioned in the DrKW report such as:

- Aircraft noise near airports
- Air quality near airports
- Surface traffic and congestion generated by airlines and their passengers
- The impact of aviation on climate change

The inclusion of these additional ESC criteria would deepen an already comprehensive methodology, especially if compiled for a global audience.

Report Six

| | |
|-----------------|---|
| Sector | Oil and Gas |
| Title | Global Energy Introducing the Goldman Sachs Energy Environmental and Social Index |
| Firm | Goldman Sachs |
| Region | Global |
| Date | 15 December 2003 |
| Analysts | Anthony Ling Jonathan Waghorn Sarah Forrest Matthew Lanstone Mark Fletcher Richard Manley Peter Mallin-Jones Michele Della Vigna |

Quote “As co-Director of Research of Goldman Sachs in Europe I was delighted to take part in the UNEP FI initiative. We strongly believe in full and consistent disclosure of CSR data by companies so that they can be included in fundamental company analysis, where we believe that they belong.

We see such issues as being an integral part of successful management in the modern world and that they should be taken into account in financial analysis and therefore investment considerations.

We believe that this can only happen if there is a concerted effort on behalf of institutional investors, investment banks and other financial institutions, corporates and stock exchanges.”

Anthony Ling, Co-Director of Research, Europe, Goldman Sachs

Extract This report responds to an invitation from the Asset Management Working Group (AMWG) of the United Nations Environment Programme Finance Initiative (UNEP FI). The invitation was to identify specific environmental and social issues likely to be material for company competitiveness and reputation in the oil and gas industry and, to the extent possible, to quantify their potential impact on stock prices.

We have attempted to analyse not only historical issues, but also those material to each company’s future prospects.

Our analysis breaks down into eight categories:

Environmental

- Climate change
- Pollution

Social

- Human rights
- “Corporate Management in the New World”
- Management diversity and incentives
- Investment in the future
- Workforce
- Safety
- Transparency and vision

Introducing the Goldman Sachs Energy Environmental and Social Index

We have created the Goldman Sachs Energy Environmental and Social (GSEES) Index by scoring companies relative to each other on metrics within the above categories. There are 30 criteria, of which 28 are objective.

We have not attempted to score the industry against other industries. We find significant differences in performance across categories, but some companies score consistently well, notably BP, RD/Shell, Statoil and ExxonMobil. BP and RD/Shell's scores are 8% higher than that of their nearest peer, ExxonMobil. Among the Regionals, Statoil is 10% higher than its nearest rivals, Norsk Hydro and BG, which also post noteworthy performances, as does ENI. Of the top ten companies in terms of GSEES scores, only OMV lacks material exposure to new legacy assets. Conversely, Marathon is the only company that scores well in terms of new legacy exposure but not in terms of GSEES.

Our index shows the relative positioning of all the companies we have analysed. We note that the data disclosed is not audited and is not consistent across the companies, and that many companies with GSEES Index scores below the average of 81 publish limited information on their social and environmental performance.

A number of distinct groupings can be seen in the GSEES Index. BP and RD/Shell stand out together with Statoil and ExxonMobil in the first tier. A second group of similarly high scoring companies includes Norsk Hydro, TOTAL, ChevronTexaco and BG, closely followed by ENI.

The remaining Regionals except MOL and CEPSA form a third tier with between 74 and 85 points. A fourth group is made up of the Emerging Market Regionals and MOL with scores between 56 and 66, while Yukos, Lukoil and CEPSA are at the bottom of the GSEES Index due to their very limited disclosure.

Conclusion In order to succeed, companies must be managed for the new world.

While no company in the industry can be said to be incident free, one-off incidents do not have a significant impact on valuation and performance unless they have a material impact on a company's return outlook. In order to succeed consistently in gaining a dominant position in new projects, we believe that companies must be managed for the new world. In addition to traditional energy industry skills, that means managing a diverse workforce in a socially responsible and acceptable manner with a vision of the evolution of the industry towards the age of gas.

Economic Return Spreads drive valuation; one-off issues do not impact share prices...

In our report Director's Cut (September 11, 2003) we argued that Economic Return Spreads are the key driver for valuations across the market place, and that the oil sector is no different.

One-off environmental and social issues have limited impact on share prices unless they have a material impact on the underlying returns of the company in question. A strong performance in social and environmental issues is no guarantee of stock market performance - both the FTSE4GOOD and DJ Sustainability Indices have underperformed the market since inception by 3% and 8% respectively.

... But social and environmental pressures are becoming increasingly important

In an increasingly complex world, social and environmental issues are having an increasing impact on companies' future project slates.

We believe that this will have an increasing impact on future returns, and therefore valuation and share price performance.

The increased focus on climate change and corporate governance, together with the rise of socially responsible investment (SRI)-managed money and non-governmental organisation (NGO) activity, is taking place at a time when the energy industry is undergoing profound structural changes: the globalisation of the gas industry, the ability to invest on a truly global basis, and the creation of a more competitive and complicated industry with the rise of a new world order of emerging market players. This could be seen as either a threat or an opportunity, and we believe the responses of the companies to these issues will have a growing impact on performance and valuation.

Socially and environmentally responsible companies dominate the industry's new legacy assets

On June 19, 2003, we published a report 50 projects to change the world, pinpointing the projects that we believe form the next generation of legacy assets and will decide the relative winners within the industry. We have identified a further 70 projects to take this analysis to the Top 120 projects. Over 70% of these are in non-OECD countries and 42% of the peak production of 18 mboepd in 2012 is gas. Those companies with the best track record in terms of social responsibility and a vision of a low-carbon world for the future dominate the market share of new projects.

It stands to reason that the best-managed companies deliver the best performance with regard to social and environmental issues and their interaction with the general business community. It is not surprising that they manage these issues as well as they manage the other more traditional success factors.

AMWG

Comment

Our general impression is that this report covers a broad range of relevant environmental and social aspects, and analyses are thoroughly performed. Goldman Sachs substantiates its arguments in a clear and constructive manner using company examples.

The report is well structured; first giving an overview of environmental and social issues facing the industry and then valuating the impact of these issues on the industry.

One of the most interesting aspects of the report is Goldman Sachs' clarity in linking classic environmental and social issues to financial performance. Goldman Sachs' methodology is clearly described and gives the reader an opportunity to evaluate both methodology and conclusions.

Quite a few of the indicators are normalized against GCI (gross capital invested). This makes the analysis interesting to fund managers not primarily interested in ESC criteria.

The report quantified potential impacts on stock price in several ways. It is argued that ESC criteria have hardly had in the past, or will have, significant impact on oil stocks over short time-lines. It is expected that they will be increasingly important in the future because of increasing importance of reputation in accessing new reserves and next generation assets.

In addition, it is pointed out that agreements like the Kyoto Protocol, along with increasing volumes of assets under SRI management, are both leading to more attention being paid to environmental and social issues.

It is interesting to note that ESC criteria in the industry are shifting from being set by external actors (e.g. climate change conventions, SRI investors, NGOs and governments), towards being incorporated as an indicator of companies' internal strategic capabilities.

Future analyses of the sector may also wish to include business partners as part of the human rights criteria (e.g. security standards).

The report considers one-off incidents to have "...limited impact on a share prices". Future analyses may wish to compare continuous pollution aspects (e.g. CO2 emissions and energy efficiency) as opposed to oil spills and other incidents which are included as part of the pollution criteria in this report.

Future reports analysts could consider building on this research in two ways:

1. An analysis of the past stock performance of two hypothetical portfolios: the top ranked and the bottom ranked companies in the GSEES Index. Such an analysis would point out the existence or not of a relationship - regardless of causality - between ESC criteria and financial performance.
2. A quantitative assessment of the potential impact of the most relevant ESC criteria identified by this report as relevant for the industry in the valuation of companies. This would be a forward-looking analysis, and could be based on a methodology similar to the one proposed by Duncan Austin in the "Changing Oil" report published by the World Resources Institute.

As a final point, we feel it is worth mentioning the analyst's commitment to the AMWG request to produce the referred report. The effort put by Goldman Sachs into the development of an industry-specific methodology and ranking system can only indicate their willingness to consider the impact of sustainability issues into the industry going forward.

This is exactly the impact the AMWG wanted to generate when it first considered developing this project.

Report Seven

Sector Utilities

Title European Utilities Pathfinder II

Firm HSBC

Region Europe

Date September 2003

Analysts Jonathan Yee
Alexandra Perricone
Bruce Bromely
Verity Mitchell

Quote “It is becoming increasingly clear that sustainable development will be one of the major drivers of industrial change over the next fifty years and that there is a growing demand from both companies and institutional investors to understand its financial impacts. It follows therefore that the successful brokers will be those that anticipate this demand, respond to it with robust financially-relevant research and thereby differentiate themselves in an increasingly crowded marketplace.”
Colin Monks, Head of European Equity Research, HSBC

Extract **Challenges and responses**

- Environmental issues are increasingly driving management practice in the sector.
- We review the environmental issues and the government responses that companies will face.
- SPW, SSE and IBE to benefit from renewables drive.

Environmental Issues Facing the Sector

While the utilities industries are facing a range of policy measures from governments to tackle environmental issues, we see the Emissions Trading Directive as the most influential piece of European legislation, given its potential impact on electricity prices.

However, with emissions trading not due to be introduced until 2005, of more immediate concern to companies is the commitment to renewable energy required by the Kyoto agreement; this is already a key driver of investment strategy in the near term.

Company Exposure, Response and RecommendationsBased on their current positioning and strategy for renewable energy development, ScottishPower, Scottish and Southern Energy and Iberdrola emerge as the best placed companies.

However, uncertainties about the impact of emissions trading will remain until the exact allocation of carbon emissions credits is finalised. We do not expect this until September 2004.

Executive Summary

We examine the commercial implications of global warming, acid rain, and nuclear waste production on the electricity industry. We describe the key environmental issues and the policy responses that countries have proposed or adopted and review the performance of European companies in meeting these policy directives.

Countries have developed and agreed a number of measures to combat the increasing threat to the environment from greenhouse gas emissions, but these are difficult to implement, both for political and commercial reasons. At a global level, the failure of some countries to ratify the Kyoto Protocol has made it more difficult to adopt uniform standards on emission control. At the EU level, nations have had mixed success in reducing emissions from fossil fuel burning. In the past, the nuclear power generation sector offered the potential for low carbon emissions. However, political concerns on spent fuel reprocessing and the risk of pollution (especially since Chernobyl) have made most governments – with the exception of Finland – reluctant to further invest in nuclear generation.

A reduction in fossil fuel burning is the key to reducing CO₂ emissions, the major cause of global warming. The energy industries are responsible for some 27% of these emissions, and are, along with the transport industry, the major contributors to emissions of NO_x and SO_x, the gases that cause acid rain. The brunt of emission control measures imposed by governments has fallen on the power generation industry because of the political and technical difficulties of reducing emissions from the transport industry. As a result, environmental issues are increasingly driving management practice in the electricity sector.

Government responses fall into three categories: global measures such as the Kyoto Protocol; European measures such as the Emissions Trading Directive, the Large Combustion Plant Directive (LCPD), and the Renewables Directive; and national responses such as the UK's Climate Change levy. Much of the impact on companies depends on the nature of their respective government's response, which is in turn shaped by existing commitments to power generation facilities and resources.

European countries and companies show notable variations in performance in meeting requirements for emissions reduction. At a national level, the UK's 'dash for gas' has made it straightforward to meet the LCPD requirements, and has led to a reduction in CO₂ emissions in accordance with the Kyoto Protocol. Germany has made good progress in wind power generation and is also on track to meet its Kyoto requirements. France's commitment to nuclear power generation has also helped it to meet Kyoto targets – but leaves the question of nuclear waste disposal unanswered.

A number of other European countries have much further to go in meeting their commitments; for example, Portugal, Spain and Italy have major coal and oil-fired generating capacity and will find it difficult to convert to renewables. The European Emissions Trading Directive aims to meet the Kyoto requirements in the most cost-effective way. This could offer countries such as Spain the ability to buy allowances that would ease the immediate problem for its generating industry.

AMWG

Comment

Through an overview of the range of environmental issues, the HSBC report identified the most relevant environmental and social issues that will be increasingly important in the future of Europe's electricity industry.

The report's detailed analysis was assessed on traditional metrics according to the relative positioning of European utilities clearly divided into four themes:

- Climate Change
- Acid Rain
- Nuclear Waste Management

■ Visual Impacts of Wind Farms.

The report's approach offered a systematic analysis of existing government measures related to each theme and the dynamics of each enacted policy on the sector prospects from both a risk and opportunity viewpoint. The companies were classified as 'the least' and 'the most' affected by these current regulatory environmental policies. Impacts on consumers were also properly identified.

The major government measures analysed were: the Kyoto Protocol, the EU Emission Trade Directive, the UK LCPD (Large Combustion Plant Directive), the Renewables directives, and the Nuclear Decommissioning directives. One of the report's noticeable strengths was the language used to explain the dynamics of each major government response impacting the electricity business in Europe.

This led to an easily accessible list of recommendations to investors and buy-side professionals. The synthesis of these recommendations was also well written and concise.

Although the impact of major government measures on companies were described in the report, there was no attempt to quantify the impact of the environmental factors on relative valuations. While this may have been essential in order to offer a deeper assessment of the materiality of each issue analysed, it is understandable as this task would have required the construction of several different possible scenarios for each basic issue other than the current official regulatory framework enjoyed by the electricity sector in Europe.

Though discussing possible new regulatory measures or new taxes that may be put into effect in the next five to ten years is not easy, the HSBC report made it clear that now many companies know more difficult conditions will follow the expiration date of the Kyoto Protocol in year 2012.

Report Eight

| | |
|-----------------|--|
| Sectors | Special Section: Power Technologies Chemicals Consumer Electronics Pharmaceuticals |
| Title | The Global Environment and Socially Responsible Investment: Environmental Technologies Fuelling Zones of Growth |
| Firm | Nikko Citigroup |
| Region | Japan |
| Date | February 13, 2004 |
| Analysts | Tsutomu “Tom” Fujita Takao Kanai Kiyotaka Teranishi Yoshihiko Yamamoto |
| Quote | “As of July 2003, there were 12,392 ISO14001 accredited Japanese companies, a considerably higher number than the 3,032 companies in the US. That said, we still see many major corporations that neglect these principles in their day-to-day operations, and we are thus unable to highly regard those companies at which executives’ remarks and environmental reports are essentially superficial and do not represent a genuine management approach focused on environmental issues.” |
| Extract | <p>Environmental Issues Take Centre Stage:</p> <ul style="list-style-type: none"> ■ Global environmental issues demand solutions at the international level due to their global scale and the need to ensure the sustainable development of mankind in harmony with the environment. ■ General awareness of environmental issues has risen in Japan amid difficulties with ratification of the Kyoto Protocol and the emergence of the heat island phenomenon in major Japanese cities. ■ The term power technology refers to energy-related technologies that offer solutions to environmental issues by making economic growth compatible with environmental protection. In effect, power technology is a source of added value created by tackling environmental issues. ■ The overall environment/energy market in Japan is projected to grow to ¥55trn by around 2010 from ¥22trn currently, according to the Ministry of Economy, Trade and Industry (METI) Council on Industrial Structure Committee on New Growth Industries <p>Power Technologies: We define the term power technology to encompass such fields as oil, gas, environmental technology, power resource development, and alternative energy, just as the term information technology (IT) includes such fields as electric machinery, precision equipment, telecommunications, and the Internet.</p> <p>Power technology is above all a long-term investment area—we do not expect power technology-related shares to climb sharply in the near-term. We think investment targets</p> |

will change over time as power technologies evolve. We see near-term merit in investments in companies involved in oil and LNG plant supply, because of greater oil and natural gas use, and gas-turbine-related companies, as US electricity shortages stimulate increased demand for new power stations.

In the medium term, we recommend companies involved in hybrid vehicle development and in distributed power generation, and over the long term, we think nuclear power generation and fuel-cell vehicles are areas worth watching.

Natural Gas:

- We view natural gas development as currently being positioned to have the greatest impact on equities of all promising environmental technologies.
- The advantages of natural gas are as follows: 1) a clean profile; 2) a current potential supply (proven reserves/annual production) of over 60 years (40 years longer than oil); and 3) low Middle East dependence, as the region only accounts for one-third of proven reserves, against two-thirds for oil.

Fuel-cell Vehicles (FCVs):

- FCVs use internal electric motors powered by a fuel cell as the main source of motive power. Such motors are more eco-friendly than gasoline engines due to their superior fuel efficiency.
- We think FCVs have the best long-term prospects of all environmental products and technologies. FCVs can potentially solve the problem of GHG emissions by internal combustion vehicles. Fuel-cell manufacturers and car makers are the principal developers in the field; Toyota and Honda are both moving ahead with FCVs.
- Fuel-efficient vehicles and LEVs enjoy preferential tax treatment in Japan (reduced purchase and license taxes), which we believe should help to encourage greater consumer take-up of such vehicles.

We think growing environmental concerns and advances in power technology offer potentially large benefits to any companies in the field.

We highlight four Japanese firms that we believe stand to make large gains from power technology over the long term and also benefit in other sectors in the short term: Toyota, Honda, Mitsubishi Corp., and Tokyo Gas

Chemicals

In response to problems with pollution, efforts by chemical manufacturers to clean up their gas emissions and wastewater and otherwise lighten the burden on the environment are showing results.

Changes in social consciousness about environmental problems, and legal system amendments present new business opportunities as evidenced by Mitsubishi Gas Chemical's (MGC's) DME (dimethyl ether) business and Ube Industries' move into the environmental field. Development of biodegradable plastic is progressing, and the market is gradually expanding.

Consumer Electronics

Our vision for longer-term growth in the consumer electronics industry focuses on establishing and sustaining decisive superiorities in digital audiovisual technologies and environmental technologies as core technologies.

The sector's first environmental moves have been in line with energy conservation and home appliance laws. The second steps have been based on each firm's technological prowess, specifically the production of products that conserve energy and that meet environmentally responsible guidelines, while establishing environmentally conscious manufacturing infrastructure.

The third moves have been focused on new energies with lower CO2 emissions, such as rechargeable batteries for electric vehicles, home solar power systems, and residential-use fuel-cell cogeneration.

We discuss the environment-related businesses of Matsushita Electric Industrial (MEI), Sharp, Sanyo Electric, and others.

Pharmaceuticals

The Japanese pharmaceutical industry is working to address environmental issues, mainly through the Japanese Pharmaceutical Manufacturers Association (JPMA), which has 80 member companies.

The JPMA has published an annual environmental report since 1999, and 57% of members companies had published individual reports as of FY3/03. However, these reports did not address such issues as unknown harmful substances, animal welfare, and medical malpractice, and we think the industry needs to make improvements in these areas.

We plan to use the survey described in this report as a starting point from which we conduct further research to be able to provide investors with advice regarding the evaluation of companies' environmental business practices and investment.

AMWG

Comment

Nikko analysts outline the global environmental challenges facing Japanese markets with a particular focus on national issues such as the heat islands around Japanese cities. The focus on the report is not about exploring the link between corporate social responsibility and share price performance but identifying investment opportunities for institutional investors in niche growth markets driven by environmental pressures.

The report provides a detailed analysis of investment opportunities open to institutional investors wanting to focus on environmental sectors with a focus on several key sectors where investment opportunities are most obvious. This research ought to have broad appeal and catch fund managers' attention through its focus on stocks and specific investment opportunities. If environmental pressures continue then Toyota, JGC Corp, Terumo and Tokyo Gas are the type of stocks that might be sensible core holdings in any long term portfolio. This report provides a good basis for that argument.

Chemicals

The report identifies critical Japanese environmental risks such as Minamata disease and Yokkaichi asthma in Japan. The industry will need to focus on energy conservation in order to meet Kyoto targets.

The report discusses environmental growth criteria that may impact on stock price. These include the DME business of the Mitsubishi Gas Chemical Company, the environmental business of Ube Industries Ltd. and the biodegradable plastics commercialisation of

various companies.

Future reports could build on this work with an analysis of social criteria relevant to the industry. Specific criteria could include product safety, occupational health and safety, risk management, environment related R&D percentage compared to total R&D, and supply chain management.

Further investigation of how environmental business can be a source of competitive power in investment markets would also be valuable.

“Switching over to natural Gas and Fuel Cell Vehicles” is presented as important initiatives for reducing green house gas emissions. Future reports may wish to investigate potential links these initiatives create between the automobile and chemical industries.

Consumer Electronics

The report notes that the consumer electronics industry will play an important role in home energy conservation. Using the Japanese final energy usage volume figures it was noted how the individual/residential sector now accounts for 29.3% of total usage. In addition, final energy consumption by the industrial sector has remained largely flat due to advances in energy conservation following two oil crises in the 1970s personal consumption has steadily risen during this time.

This report states that the sector will not be able to secure the sustainable growth and development without securing competitive advantage in environmental technologies. Companies will need to invest in technology development to enhance energy consumption efficiency for individual products. Interestingly the report notes that there is a widening gap between companies capable of funding sufficient R&D outlays and those lacking adequate resources.

Though the potential impact on stock price is not quantified in this report, it describes the advantage Matsushita Electric Industrial achieved with the introduction of energy conservation measures. It also notes the efficiency of Matsushita’s non-freon refrigerator and oxygen air-conditioner.

Although legislation has increased costs for consumer electronics companies in the past, the top-runner approach in the revised Japanese Energy Conservation Law has created incentives for makers to develop efficient energy-saving products. It is notable that the consumer electronics industry now places environmental technology in the same category of core technology as digital capabilities.

Japanese consumer electronics companies active in international markets are well positioned to benefit from legislation abroad because of both their high foreign sales ratio and the high level of compliance requirements within Japan. Indeed many of them are already compliant with the European Union RoHS legislation (Restriction of Hazardous Substances, effective as of July 2006). Future reports may wish to evaluate potential windfalls to Japanese companies abroad as a result of this high level of compliance.

On the risk side future reports may wish to investigate the sector from a social standpoint via investigation of ESC criteria such as work environment and child labour and supply-chain management risks.

On revenue creation this report notes the potential of home fuel-cell co-generation systems, energy conservation features and efficiency relating to refrigerator and air-conditioner products. In future, analysts could also address potential benefits associated with environmental measures relating to environmental corporate strategy and management systems.

Enforcement of regulation significantly helps companies to promote environmental responsibility. Importantly, responses to new laws will not necessarily cause a cost increase. In fact, they can strengthen competitiveness and improve corporate value.

Integrated and standardized reporting of the criteria mentioned in this report by Japanese companies will facilitate deeper analysis of this sector.

Pharmaceuticals

This report appreciates efforts made by the pharmaceutical and medical device industry to address environmental issues such as energy conservation, resource savings and hazardous waste.

It also identifies additional ESC criteria that may be material for the pharmaceutical and medical device industry:

- chemical substances with high-level biological activity
- unknown harmful substances created by chemical synthesis
- experiments on humans and animals as part of research
- product-related medical malpractice
- disposal of hospital waste such as PVC (Polyvinyl Chloride)

Though the potential impact on stock price of these criteria is not quantified in this report, it describes the advantages to Terumo from the disposal and recycling of medical materials and products, their shift from PVC to other materials and their advanced waste audit system.

Political measures against unknown harmful substances created by chemical synthesis, experiments on humans and animals as part of research and so forth will be an important driver because they are not generally recognized by companies and there is, according to this report, no relevant legislation on these criteria in Japan.

Conclusion An angle that might be interesting to develop would be whether the team thinks these companies are in this position due to luck or strong visionary management. A subjective analysis might provide a further interesting perspective on management quality at the companies mentioned.

Future reports on Japanese markets could build on this research via specific evaluations of the impact of the criteria mentioned in this report on corporate value using analysis methods similar to those pioneered in reports 2, 3, 6 and 11 of this project.

Report Nine

| | |
|-----------------|---|
| Sector | Insurance |
| Title | Corporate social responsibility (CSR) in the non-life insurance sector |
| Firm | Nomura |
| Region | Japan |
| Date | 15 December 2003 |
| Analysts | M. Okamoto |
| Quote | “It seems that increasingly complicated CSR-related activities are beginning to bear fruit as management teams take pains to clearly define the fundamental framework, vision, and process, which we think should enable companies to devise a way of strategically leveraging their CSR activities.” |
| Extract | <p>Japanese nonlife insurers started taking measures to address environmental issues from relatively early on, becoming in November 1996 the first non-manufacturing industry to map out an environmental protection plan. The General Insurance Association of Japan has moreover formed a special committee to discuss environmental issues in a bid to strengthen industry efforts in this area.</p> <p>These trends have influenced Japanese nonlife insurers to the extent that six of them have now become signatories to the Insurance Industry Initiative (III), which is a statement of environmental commitment by the insurance industry drawn up jointly by industry and the United Nations Environment Programme (UNEP). This makes nonlife insurers the most proactive among Japan’s financial institutions in terms of promoting sound environmental practices.</p> <p>In this report, we assume that the end objective of corporate social responsibility (CSR) is to ensure a company’s survival and earnings sustainability over the medium to long term. In order to pursue and achieve that objective, we argue that a company needs to draw up a series of strategies that increase the effectiveness of socially responsible activities for its stakeholders (shareholders, consumers, and employees).</p> <p>On this assumption, in this report we take a look at nonlife insurers’ efforts to strengthen CSR as seen from the various perspectives of shareholders, consumers (sales agents, policyholders), and employees.</p> <p>Because these efforts in the CSR sphere are unique to each insurer, we believe it is extremely difficult to ascertain whether one insurer is more socially responsible than another based on details of such activities alone. Nevertheless, we think the most important point is the attitude of these companies toward CSR, and whether such activities are being carried out with stakeholders’ interests in mind.</p> <p>On this front, we are most impressed by Sompo Japan Insurance because it seems to be ahead of rival nonlife insurers in terms of its CSR activities. Admittedly CSR activities have only just gotten on track, so we do not think a final verdict can be made at this juncture. But in Japan’s financial sector, we believe nonlife insurers are at the forefront of the spread of the CSR movement, and are implementing related measures aimed at ensuring a company’s survival and earnings sustainability over the medium to long term.</p> |

AMWG

Comment The Nomura report reflects a trend toward considering non-financial criteria in the insurance sector. Although it will be important in the future to move toward complete sector analyses, presenting national markets, which give insight into the cultural differences in the approach to CSR, is enriching.

The report aims to evaluate non-life insurers by analysing each of their strategy. Future research may wish to propose a specific list of ESC criteria that could be relevant for financial analysis to take into account.

The study recognizes the complexity of defining CSR when “the end objective of CSR is to ensure a company’s survival and earnings sustainability over the medium to long term.” But as such, the report ties CSR into a company’s need to survive – often ignored in SRI analysis, and argues, “A company needs to draw up a series of strategies that increase the effectiveness of socially responsible activities for its stakeholders.”

The argument is that companies can negotiate among potentially conflicting stakeholder interests by aiming for “the beneficial effects with the highest number of common denominators”.

This alignment with stakeholders is a key innovation of the study, proving fruitful for further analyses. The body of the report text focuses on the three principle stakeholders of non-life insurance, namely shareholders, consumers (sales agents and policy holders) and employees. This breakdown places the concerns of shareholders among other stakeholders as opposed to their traditional superior position.

The report focuses more on the shareholders than on the other two stakeholders, though it does include corporate governance in its shareholder analysis. It also does not open the range of stakeholders to civil society – consumer groups, local communities – or even to others in the supply chain. Using the logic of the highest number of common denominators, it would be more beneficial to increase the range of stakeholders.

Much of the information in the body of the report comes from data collected by the General Insurance Association of Japan via annual surveys since 1995 in relation to the action plan that serves to promote environmental activities by monitoring activities – measurement, awareness-raising, training.

This group work underlines the importance of individual companies working together to design common programs and could be a motivation for governments to act as a catalyst if external impetus is needed.

The document draws several key conclusions.

- Identifies corporate attitudes toward ESC criteria and uses these to determine the company’s ability to develop and implement a CSR strategy.
- Compliance is the minimum requirement for upholding corporate social relationships. Despite more or less uniform compliance systems there are real differences among the measures employed.
- CSR-related activities could differentiate insurers over the long-term. This positioning by Nomura could help strengthen the financial argument for the inclusion of non-financial criteria in fundamental analysis.

Though the study did not respond directly to the AMWG invitation it has real merit for introducing SRI-type analysis to mainstream analysts. For analysts new to CSR-type analysis, this report offers a clear, concise and documented look at what is happening in a particular sector and market.

Report Ten

Sector Utilities

Title European Emissions Trading Scheme

Firm UBS

Region Europe

Date September 2003

Analysts Vincent Gilles
Andrew Wright
Luis Amusatogui
Marco Cipelletti

Quote “They probably did not realise it at the time, but when European countries committed themselves to reducing collective emissions by 8% in 2008-12 (relative to 1990 levels) they transferred a potential net windfall that we value at E27.6 billion for the companies we study in this report (c10% of their EV). This is largely because we expect that the cost of emissions will drive wholesale market prices higher and the ability of companies to pass this rise further on their final customers. Whatever happened to the principle of ‘polluter pays?’”

Extract We published our first report addressing the issue of carbon dioxide (CO₂) in May 2003 (The greening of UK electricity, 63pp).

In this new report, we:

- (1) Update investors on the most recent developments and their potential impact on the economics of the companies under our coverage; and
- (2) Shed light on the very complex national issues and suggest core scenarios for each country.

We believe this is key to understanding the impact of the coming changes on the valuation of each individual company.

In this report we focus on German, Italian, Spanish and British utilities. We have excluded Belgium and Portugal from this report as the scarcity of information made drawing conclusions too uncertain.

During the summer of 2003, the EU council adopted a directive regulating the introduction of CO₂ trading schemes across the current and future members of the EU. It is now up to the EU member states to implement the scheme. They have to define their National Allocation Plans (NAPs) by the end of March 2004. Issuing the Directive and setting well-meaning principles was the easy bit; defining the NAPs will be very complex and politically challenging.

The windfall is potentially large in most cases

They probably did not realise it at the time, but when European countries committed themselves to reducing collective emissions by 8% in 2008-12 (relative to 1990 levels) they transferred a potential net windfall that we value at E27.6 billion for the companies we study in this report (c10% of their EV). This is largely because we expect that the cost of

emissions will drive wholesale market prices higher (see Chart 1) and the ability of companies to pass this rise further on their final customers. Whatever happened to the principle of ‘polluter pays’?

Our country-based scenario approach is relatively simple: each analyst was asked to define what he or she thought could be disaster, black sky, central and blue sky scenarios. Each analyst has given his or her country sensitivities. Through this approach, we have largely been able to identify a ‘value at risk’ linked to the coming changes as much as tentative conclusions on the impact on valuations.

Chart 2 shows the estimated impact of emissions trading on our European utility valuations:

In most cases, we expect the introduction of ETS to result in a positive impact on equity valuations under our ‘central’ scenario. No single company shows an implied negative impact on the central scenario and only three out of 10 show a (limited) loss of value in the black sky scenario.

Eight out of 10 companies would in theory suffer from falls in their equity value under the disaster scenario, but none would get into financial trouble like British Energy.

Only one company wins under all four scenarios (Scottish and Southern Energy).

A number of companies seem to be relatively ‘safe’. E.ON, Iberdrola, and to a lesser extent ScottishPower and International Power would suffer a serious hit in value only under the disaster scenario. Counter-intuitively perhaps, we do not believe that Enel will be hit by the introduction of ETS. This is because we believe Enel will be less CO₂-intensive in the future.

Three companies out of 10 (Endesa, Union Fenosa, RWE) would only experience significant swings in their equity depending on our choice of scenario. This is due to their exposure to coal generation and, in the case of RWE, to coal mining as well. In our view, this implies that the equity risk premiums of these three stocks should increase in the next few months. SSE should benefit the most – followed by Iberdrola and E.ON. Some uncertainty on Endesa, RWE and Union Fenosa.

Take the example of RWE in the chart above. First, 0% change represents the current share price of the stock. The range of possible changes in the stock price is from –22% to +57% depending on our four scenarios. The central scenario would add 24% to the current share price level, while the black sky scenario would take 3% off the share price. Another stock of particular interest is SSE – even in our ‘disaster’ scenario, the share price should rise.

But will companies be able to keep this windfall?

The size of the windfall itself makes it vulnerable to a form of clawback, be it at the level of permit allocation (the main tool for most countries) or at the level of regulation (by limiting the capacity of the companies to pass the rise in wholesale prices on to their final customers). There is a distinct possibility that in a period of large public deficits, a number of European countries will realise that they can find a way to transfer the windfall back to their own coffers. At the very least, we believe it is probably reasonable to assume that France, Italy, and possibly Spain and Germany will use the allowance allocation as a tool of industrial policy.

Which shares benefit in this analysis?

Probably the first question to be asked is whether it is yet time for investors to trade on this theme. Despite the enormity of the coming changes, we believe that the share prices

of European utilities have not yet started reflecting the introduction of ETS. In our view, this is due to both the large uncertainty surrounding NAPs and the difficulty for the market to identify the adequate risk premium to be associated with the coming changes. In addition, we would expect there to be no impact on profitability before 2005, making multiples-based valuations difficult.

However, with news flow on permit allocations swelling in the next few weeks and months, we believe that stocks where we can identify an impact on the share price should start reflecting the changes in value.

There is only one European stock that benefits under all four of our scenarios: Scottish and Southern Energy. As noted above, even the disaster scenario would have a positive effect on SSE's value.

We would also argue that E.ON and Iberdrola have risk profiles skewed towards the upside and could benefit from this theme. As a result, we have incorporated an element of the benefits of the introduction of ETS in the price targets of SSE, Iberdrola and E.ON. This is based on the risk/reward approach described in the next two tables.

Beyond this, the choice is more complex because either the scope of the potential impacts is too narrow (Centrica, ScottishPower, and Enel) or because the volatility implied by the 'value at risk' identified appears to be too large, in our view (RWE, Endesa, and Union Fenosa). We have not included any change in the valuation of these stocks. However, we would take the view that these three stocks would benefit if anything like our blue sky scenario turned out to be true.

The following charts show the impact of our scenario approach on the equity valuations of the stocks mentioned shown versus the absolute level of the share price, potentially highlighting to what extent the share price may have recognised the CO2 issue.

In our view, the best way investors can try to include ETS in their investment decisions is by running a risk/reward analysis, as shown in the following table.

Based on this analysis, we are raising our price targets on three European utilities: Scottish and Southern Energy (from 600p to 665p), E.ON (from E53.3 to E54.7) and Iberdrola (from E16.6 to E18.0). On the back of our price target increase for Iberdrola, we upgrade our rating from Neutral 1 to Buy 1. SSE, E.ON and Iberdrola price targets upgraded.

Long-term consequence for the sector

In our report on ROIC in European utilities that we jointly published with Deloitte on 25 September 2003 (Will value destruction continue forever? 95 pp), we highlighted our concern that the sector in Europe only changes its course as a result of external shocks. We take the view that the introduction of ETS will be one of them. In the following paragraphs, we review some of the potential consequences.

Business models: the great return of generation assets?

The last few years have seen a flight out of generation in many European countries. This was because liberalisation processes were largely asymmetrical, resulting in declining wholesale markets but stable and potentially increasing transmission and retail margins. The introduction of ETS transfers value back to the generation business.

Obviously not all generation assets will be worth more in the next few years. One of the key goals of ETS is to incentivise generators to cut coal and promote clean(er) generation sources. We highlight in this piece that the value of gas plants strongly rises across Europe (by more than 70% in the UK and Germany on the back of the rises in wholesale mar-

kets), whereas coal plants are only worth a fraction of their past value if anything. On balance, gas, nuclear and hydro generation is now worth much more than in the past whereas the value of the other businesses in vertically integrated companies is not necessarily negatively impacted. It is probably safe to assume that British Energy would have benefited from the introduction of ETS.

A coming M&A bubble?

Some companies will be worth more, either because of the intrinsic value of their assets or the value of the permits that they will be allocated. Investors will be well inspired in the future to check the portfolio position of European utilities, as unused permits will carry a very tangible value. It is probably safe to assume a rise in the value of many Eastern European generation assets on the basis of their potential permit allocation (see the concept of 'hot air', starting on page 16). Given the rise in wholesale market prices, pure supply and retailers may also be interested in hedging themselves 'upward' with generation assets – an interesting change in comparison with the last few years.

Increased regulatory risk?

As we said earlier in this introduction, we feel that the politicians who agreed to the ETS scheme did not fully realise the consequences of their actions. In our view, they will gradually wake up to the fact that utilities will benefit from the Kyoto Protocol. In a period of large budget deficits and because the allocation of permits comes at a time where governments and regulators have little influence left on the sector, we fear that the legal application of ETS will become the 'Alamo' of regulation. We mentioned earlier in this report the risks linked to a taxation of the 'CO2 windfall'.

Renewables: still necessarily the future in all of Europe?

Many European countries have devised schemes that favoured power generation based on renewable energy over the past few years. The conjunction of those schemes and ETS will potentially compound the rise in prices we expect (particularly in the UK), creating a very complex legal situation (several countries have several, largely contradictory, emissions targets). Given the political importance of hitting Kyoto targets, we would argue that countries like Germany may reform their renewable policies – potentially cutting some of the benefits enjoyed by cogeneration and other renewable energy sources.

A different equity risk premium?

As value in the sector moves back to generation, investors will potentially face:

- (1) Higher earnings volatility; and
- (2) A different level of equity risk premium due to changes in regulation and valuation.

Will nuclear come back?

The Kyoto Protocol was signed by many European governments in response to the growing wave of green sentiment in the 1990s. Many large European countries had or have governments involving Green parties (France, Germany, and Belgium). Those governments are in charge of allocating permits and will face the fundamental question of how to treat nuclear plants – one of the only two CO2 emission-free sources of baseload generation in Europe. In some 'green' countries, the idea of maintaining nuclear capacity in the long term is politically contentious.

Germany introduced a programme of nuclear pull out by 2026 in 2000. Belgium has a similar scheme (at least officially). At the same time, Spain and France are quietly working on extending the useful life of their plants. Finland has launched a new nuclear tranche. We would expect some heated debate on nuclear energy in the next few years and, possibly,

a change in consensus. This is particularly relevant if countries are really determined to hit the 'long-term' target of a 70% reduction in greenhouse gas emissions.

Rising fuel costs and rising energy prices.

The rise in gas-based generation should result in a significant rise in gas prices across Europe. McKinsey suggests that the introduction of CO₂ emissions trading would result in consumption of an additional 56 bcm (likely imported) by 2010, in addition to the 46 bcm that the rise in gas demand from power generation should lead to in Western Europe.

McKinsey also concludes that gas prices at the border could rise by 15% by 2010 as a result of the additional demand suggested above (from US\$3.2/Mbtu to US\$3.67/Mbtu). This would have consequences on utilities' costs (which we believe we have correctly taken into account in our models) and the prices of electricity across Europe.

Those who doubted the strategic relevance of the Ruhrgas acquisition by E.ON will be given plenty of evidence in the medium term. We could also identify Centrica, Suez (because of its interest in Distrigaz) and potentially Gas Natural in Spain as potential beneficiaries of the rise in gas volumes being exchanged.

An increase in the value of gas could also marginally benefit Centrica. As mentioned earlier, RWE (because of Rheinbraun) could be negatively impacted by the potential decline in the value of coal mines.

Looking beyond utilities.

This second study of the impact of the introduction of ETS in Europe has strengthened our view that many other European industrial activities will be impacted in the near future. We make the following two assumptions:

1. The rise in power prices will depress the bottom lines of many industrial companies. Power prices account for more than a third of the controllable costs of an aluminium smelter, for example. The introduction of ETS cannot and will not be neutral on some European heavy industries, impacting their relative competitiveness.
2. Fuel suppliers will be impacted. It is probably safe to assume that gas suppliers and transmitters will benefit from the coming changes in the shape of generation in Europe. Conversely, coal producers could be seen as negatively impacted.

AMWG

Comment UBS produced a thorough discussion of ESC criteria associated with emissions trading in electric utilities. The report employed a thematic approach assessing the impact of the emission trading system on sector specific issues.

The UBS valuation methodology was extremely rigorous and integrated four alternative scenarios in four countries for the price of carbon emission rights. They also suggested a hypothesis regarding the potential rise in energy wholesale price. Overall this pricing methodology was innovative – notably the integration of the VAR model which was sensible and offered the possibility to open new ways to integrate ESC criteria into mainstream pricing models.

We applaud the combination of the quantitative valuation model trying to define what the utilities' stock prices would be with the more qualitative approach leading to the definition of long-term consequences for energy utility structure.

The report covered chosen issues/countries with individual attention, clearly identifying potential winners and losers. The key social impacts that were recognized and set the stage

for political choices associated with potential utility gains in all countries, were particularly innovative and could be very useful in long-term stock picking investment processes. The report's consistency in choosing a set of assumptions and applying them fairly to all companies chosen was admirable, as was the identification of the upstream, downstream, business/strategic, and political implications of the various scenarios. The discussion of emissions trading history was helpful.

The report's key lessons were as follows:

Governments: The significant choices were well noted as were the possibility of increasing consumer energy/electricity prices and windfall gains to utilities. The discussions of government responses were illuminating.

Analysts: A major change in environmental regulation could have widely different effects on companies in the same sector.

Future research may wish to extend coverage of this sector to include ESC criteria such as non-fossil fuel utilities and the reputation impacts on generation cost increases. UBS may also wish to consider semi-annual updates to this report to keep key timelines current and limiting outcome uncertainty.

In conclusion, we feel that this report is a prime example of ESC criteria being treated as a purely financial subject.

Report Eleven

Sector Insurance

Title Insurance & Sustainability
Playing with fire

Firm West LB AG

Region Europe

Date March 2004

Analysts Dr Hendrik Garz
Volker Kudzusz
Claudia Volk

Quote “As the insurance sector is exposed to several ESC topics on both the asset and the liability side, this is an excellent case study of how SRI aspects will influence equity markets in the future.”
Markus Plümer, Head of Research West LB AG

Extract The accounting scandals in the US and in Europe have brought markets to focus more strongly on corporate governance as an investment topic. Transparency requirements have been noticeably on the rise since then. How a company deals with sustainability is increasingly interpreted as a signal of its governance quality.

Given the dual role of insurance companies as investment vehicles and fiduciaries, their duty to take sustainability into account is particularly acute. The unique position that the insurance sector has in terms of sustainability topics is also revealed in insurers' balance sheets, as both assets and liabilities are affected in interdependent ways.

Thus, the leverage insurance companies stand to gain by incorporating sustainability topics is considerable.

Climate change, geopolitical risks (terror, SARS, emerging markets) and gene technology are the three focal sustainability topics we have identified for the insurance industry and which we used as the basis for our survey among European insurers.

We approached 17 listed companies, and 10 answered our extensive questionnaire. The list of participants includes the primary insurers Allianz, AMB Generali, Generali, Nürnberger Beteiligungen, RAS and ZFS and the re-insurers Converium, Hannover Re, Munich Re and Swiss Re.

SRI performance: more gain than pain

Does it pay off financially to make sustainability a fundamental corporate governance principle? This question is a particularly important one for insurers given their dual role as investment vehicles and fiduciaries. A myriad of anecdotal examples, theoretical considerations about the drivers of shareholder value and, in particular, empirical analyses indicate that sustainability is a factor that can drive equity returns in its own right. Our conclusion that ‘it pays to be good’ can also be understood as an appeal to insurers to introduce a structured SRI approach into their asset management activities.

Triple bottom line rating: David beats Goliath

Corporate social responsibility is first and foremost a qualitative concept. However, quantifiable indicators do exist that can help in assessing companies' sustainability performance (even though these are somewhat subjective). Based on data delivered by our research partner EIRIS, we have developed a structured approach that enables us to score companies in terms of: Governance, Environment and Products (our triple bottom line). We also differentiate between exposure and management quality. Our most important findings are:

- (1) Overall the insurance sector's sustainability exposure is below par, whereas in terms of management quality, insurers are ranked above average.
- (2) Insurers focus mainly on Governance; accordingly, on average they receive comparatively high scores in this area. Positive or negative products unfortunately are not in the focus of SRI databases.
- (3) Insurers apparently consider their impact on the environment as negligible; they see only little need for action; hence, it is no surprise that the sector's Environment Score is below average.
- (4) The 'large cap effect' that is generally present in corporate sustainability ratings plays only a limited role in the insurance industry; small to medium-sized companies (according to their free float market cap) fill the top four places in our rankings.

Climate change – some like it hot

An increasing number of companies and investors are realising that climate change carries significant economic implications for shareholder value. The particular relevance for insurers is due to the close correlation between underwriting losses (due e.g. to weather anomalies) and losses in the value of capital market investments. Losses on the insurance side are becoming more frequent and more costly. In particular the major loss events, like Hurricane Andrew in 1992, harm the insurers' underwriting profitability. In our view, a systematic approach to risk management which incorporates pricing, selection and research is essential.

On the investment side, climate change is without doubt a threat to the market value of assets under management. In addition, fiduciary duties are being interpreted increasingly broadly, and this includes the need to consider climate change risks. Again, climate change constitutes a dual risk for insurers.

We conclude that climate change can have a significant impact on the net income of insurers and on dividends, which in turn affects the attractiveness of insurers' shares.

However, there are also growth opportunities associated with new products and lines of business driven by climate change issues (e.g. in the field of emission trading markets).

Our survey results show that:

- (1) Companies are in general well sensitised about their climate change exposure.
- (2) Companies believe they have the economic risks comparatively well under control, as evidenced in the dominance of pricing and selection measures over exclusion.
- (3) A link between underwriting and investment, i.e. holistic management of climate change risks, is barely discernible.
- (4) Companies see growth opportunities in new products (emissions trading schemes, catastrophe bonds, etc.) and are partially exploiting these opportunities.

Gene technology – brave new world?

Advances in gene technology harbour a broad spectrum of risks and opportunities for the insurance sector. One of the new business opportunities, for example, is liability insurance against the unintentional spread of genetically modified seeds. However, gene tech-related underwriting risks are still relatively new and difficult to assess. Extensive research is clearly indispensable for adequate pricing.

As it is becoming increasingly feasible for insurers to diagnose genetically conspicuous dispositions, they are able to exclude specific risks from personal policies. As a result, the insurability of risks is likely to increase, although insurers will be facing new challenges as gene technology may lead to sudden increases in life expectancy (longevity risk). On the investment side, stakes in companies that depend on society's acceptance of gene technology also harbour new risks and opportunities.

The main results of our survey are:

- (1) Insurers are less able to estimate and grasp the economic implications of gene technology for their individual companies and for the insurance industry as a whole than they are in the field of climate change.
- (2) Re-insurers are leading the way to a certain extent; they pay more attention to research and are more confident than primary insurers in selecting risks.
- (3) Companies do not only see the downside risks of gene technology; e.g. assessments in life/pension insurance are predominantly positive, perhaps as a result of the improved risk selection offered by genetic testing. The growth potential of new products is recognised, which may also be due to the expanded insurability of risks offered by genetic testing.

Geopolitical risks – uncertain times

September 11 represented a watershed. Since then geopolitical risks have been more deeply rooted in our collective conscious than perhaps ever before. The insurance industry was hit from two sides: underwriting losses depleted actuarial reserves, while investment income and undisclosed reserves melted away with share prices. Here, too, the duality of the industry's exposure is apparent.

Terrorism is the most extreme of many different geopolitical risks. Globalisation has elevated epidemics like SARS and bird flu to global threats. The 'risks of infection' increased in a purely economic sense as well, as the Asian crisis of the late 1990s painfully demonstrated.

The results of our survey show two things. Firstly, companies struggle to assess terror risks effectively and therefore they exclude rather than price them. Secondly, with regard to Emerging Markets, companies focus on the overall high market potential that is driven by population growth and increasing prosperity. According to the insurance principle of congruency insurers are not allowed to invest significant amounts of policyholder's money into emerging markets. Notably, shareholder's money is also invested as part of the Emerging Markets policyholders' money.

AMWG

Comment West LB undoubtedly identified the specific environmental and social issues important for company competitiveness and industry reputation using a unique approach – presenting the sector specific issues of geopolitical risk and gene technology developments in addition to climate change. West LB is the first financial research firm to attempt to tackle these first two subjects.

The report produced a rigorous rating of ten insurance companies that filed CSR oriented evaluation questionnaires using Hendrik Garz's extensive statistical knowledge and sophisticated methodologies. This statistical view is completed by many industry insights using Volker Kudzus' expert knowledge of the insurance sector.

The report however did not identify or quantify the theme issues' potential impact on stock price saying it was very difficult to do. When viewed alongside their peers' reports, this is evidently the case as it seems no one has calculated a "CSR alpha" or a "CSR beta" at the stock level. Notably, West LB tried instead to measure the issues' impact on share value – clearly positive.

The report offers a new view of insurance companies. Consequently, it is worth reading for both investors and insurance companies themselves. The survey's results demonstrate that the insurance companies are not all aware of what the consequences of these major issues may be on day-to-day business.

Geopolitical risk and gene technology are innovative issues to be considered. In the future research teams may also wish to consider how companies deal with their retail clients in the field of auto insurance and the impacts of their pricing policies in general.

UNEP FI Asset Management Working Group Members

AMWG Chairs

Carlos Joly
*Advisor to the CEO,
Storebrand Investments*

Vincent Zeller
*General Manager and Chief Investment Officer,
Groupama Asset Management*

AMWG Member Firm Representatives

Toby Belsom
*Analyst, Morley FM,
United Kingdom*

Eric Borremans
Head of SD Research, BNP Paribas AM, France

Xavier Desmadryl
SRI Analyst, HSBC AM Europe SA, Europe

Martin Grosskopf
*Manager of SD Research, Acuity Investments,
Canada*

Ms. Hanne Iversen Rye and Ms. Hege Haugen
Analysts, Storebrand Investments, Norway

Barbara Krumsiek
*President, CEO and Co-Chairperson,
Calvert Group, United States*

Mr. Norimichi Mishima
*Joint Managing Director and
CEO of London Office,
Nikko Asset Management Co. Ltd., Japan*

Mr. Eiichi Takeda
*Manager of Corporate Planning Department,
Nikko Asset Management Co. Ltd., Japan*

Gianluca Manca
*Global SRI Equity Fund Manager,
San Paolo IMI AM, Italy*

Cromwell Mashengete
Fund Manager, Old Mutual, South Africa

Mary Jane McQuillen
*Director, Social Awareness Investment
Programme, Citigroup AM, United States*

Luiz Maia
CEO, ABN AMRO Asset Management, Brazil

Pedro Villani
*SRI Portfolio Manager,
ABN AMRO Asset Management, Brazil*

Bruno Erbiste
*SRI Analyst,
ABN AMRO Asset Management, Brazil*

UNEP FI Secretariat

Paul Clements Hunt
Head of Unit

Jacob Malthouse
Project Lead

Cecilia Bjerborn

James Gifford

James Groth

Lauren Ungerleider

Project Team

Disclaimer and copyright notices

Disclaimer and copyright notices for use of the UNEP Finance Initiative 'The Materiality of Social, Environmental and Corporate Governance Issues to Equity Pricing' report (hereafter referred to as 'the report').

UNEP FI is a strategic partnership between the United Nations Environment Programme (UNEP) and signatories of the Finance Institutions Initiative and the Insurance Industry Initiative (altogether hereafter referred to as 'UNEP FI').

Disclaimer notice

The information contained in the report is meant for informational purposes only and is subject to change without notice. The content of the report is provided with the understanding that the authors and publishers are not herein engaged to render advice on legal, economic, or other professional issues and services. Subsequently, UNEP FI is also not responsible for the content of web sites and information resources that may be referenced in the report. The access provided to these sites does not constitute an endorsement by UNEP FI of the sponsors of the sites or the information contained therein. Unless expressly stated otherwise, the opinions, findings, interpretations and conclusions expressed in the report are those of the various contributors to the report and do not necessarily represent the views of UNEP FI or the member institutions of the UNEP FI partnership, UNEP, the United Nations or its Member States.

While we have made every attempt to ensure that the information contained in the report has been obtained from reliable and up-to-date sources, the changing nature of statistics, laws, rules and regulations may result in delays, omissions or inaccuracies in information contained in this report. As such, UNEP FI makes no representations as to the accuracy or any other aspect of information contained in this report. UNEP FI is not responsible for any errors or omissions, or for any decision made or action taken based on information contained in this report or for any consequential, special or similar damages, even if advised of the possibility of such damages.

All information in this report is provided 'as is', with no guarantee of completeness, accuracy, timeliness or of the results obtained from the use of this information, and without warranty of any kind, expressed or implied, including, but not limited to warranties of performance, merchantability and fitness for a particular purpose. The information and opinions contained in the report are provided without any warranty of any kind, either expressed or implied.

Copyright notice

The report, and the contents of the report remain the sole property of the UNEP Finance Initiative. None of the information contained and provided in the report may be modified, reproduced, distributed, disseminated, sold, published, broadcasted or circulated, in whole or in part, in any form or by any means, electronic or mechanical, including photocopying, or the use of any information storage and retrieval system, without the express written permission from the UNEP FI secretariat based in Geneva or the appropriate affiliate or partner. The content of the report, including but not limited to text, photographs, graphics, illustrations and artwork, and names, logos, trademarks and service marks, remain the property of UNEP FI or its affiliates or contributors or partners and are protected by copyright, trademark and other laws.

2004 Report

This report summarises the results of a project conceived and implemented over 14 months during 2003/4 by a public private partnership between the United Nations Environment Programme and a group of twelve asset management firms from around the globe.

Its purpose was to explore and document the financial materiality of environmental, social and corporate considerations and criteria as they relate to the investment management of mutual, pension and other institutional funds.

Global pension assets of the eleven major capital markets, measured in local currencies, reached US\$ 14.2 trillion in January 2004. For the owners and managers of these assets, the results of this project demonstrate that by not considering environmental, social and corporate governance criteria in their investment procedures they are unnecessarily exposing themselves to financial risks and may also be missing out on opportunities.

About the UNEP Finance Initiative

UNEP FI is a unique global partnership between UNEP and the private financial sector. UNEP FI works closely with approximately 250 financial institutions to develop and promote linkages between the environment, sustainability and financial performance. Through task forces, working groups, training programmes and research, UNEP FI aims to address the opportunities and needs that sustainable development can provide to the financial and subsequently the larger stakeholder community.



UNEP Finance Initiative
Innovative financing for sustainability

United Nations Environment Programme

UNEP Finance Initiative
International Environment House
15, Chemin des Anémones
CH-1219 Châtelaine, Genève
Switzerland
Tel: (41) 22 917 8178 Fax: (41) 22 796 9240
email: fi@unep.ch website: www.unepfi.net