



Corporate Environmental Performance As A Factor In Financial Industry Decisions

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CORPORATE ENVIRONMENTAL PERFORMANCE
As a Factor in
FINANCIAL INDUSTRY DECISIONS

STATUS REPORT

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1. EXECUTIVE SUMMARY

PURPOSE AND SCOPE

How does the financial services industry (FSI) factor corporate environmental performance in assessing financial performance (EP)? The United States Environmental Protection Agency (USEPA) sponsored an analytical review of published information to find the answers.

- Specifically, this review is designed to determine how the private sector of the financial services industry includes measures of their corporate clients' environmental performance in making investment, credit extension, and underwriting decisions.¹

The review was limited to materials that were publicly available as of December 1997 and was primarily limited to North America.² Eight segments of the FSI were considered:³

- Commercial banks
- Investment banks
- Mutual funds
- Pension funds
- Life insurance companies
- Property & Casualty (P&C) insurance companies
- Venture capital firms
- Foundations

METHODOLOGY

The researchers conducted a broad electronic scan of the academic literature and major industry publications to assess the industry's current efforts to link EP and FP. In addition to conventional literature sources, the following areas were examined:

- Current product offerings available to industry
- Environmental reports published by corporations and financial institutions
- Environmentally-oriented products offered by the FSI
- Government documents

- Research studies and reports prepared and published by various business, governmental, and environmental groups

Information that was not publicly available in written form or that did not explicitly address environmental issues was excluded. Such sources included personal conversations with industry experts, personal correspondence and internal financial institution documents not available in the public domain.

The literature review focused on three broad questions:

- What is environmental performance (EP) and how are environmental performance indicators (EPIs) currently being looked at and reported on by industry?
- How does the FSI currently—or how might it potentially—factor the EP of its corporate clients in making decisions about insurance underwriting, credit extension, or investment?
- What knowledge gaps might serve as the basis for further research?

OVERVIEW

The report is presented in four parts. Part 2 provides a general background for understanding the basis of this report. Part 3 gives the reader a basic understanding of what is meant by EP and EPIs, why EP might be relevant in making certain types of financial decisions, and how EP might be measured. Part 4 examines how the FSI is currently looking at, and working with, EP and EPIs. Finally, Part 5 summarizes the report's findings and recommends potential areas for further research.

SUMMARY OF KEY FINDINGS

This review covered a vast body of literature, which identified over 300 references that focus on ways in which environmental factors relate to, or potentially affect, FP. Based on this information, the researchers identified nine key themes:

1. There appears to be no clear consensus on how to define EP at the firm or plant level, nor on how to report such performance to the general public or to the FSI.
2. It appears that EP has the potential to affect a firm's rate of return, cash flows, creditworthiness, the price of its publicly traded securities, and/or its likelihood of filing a property or casualty insurance claim. Although this potential exists, there is a fair amount of disagreement as to the materiality of the impact within the FSI.

3. An unresolved issue for integrating EP into financial decisions is how to determine for a particular industry or transaction (credit extensions, investments, or insurance underwriting) which of the many aspects, if any, of EP are material to firm-level FP.
4. The FSI's perspective is colored by its past experience with environmental risks including those for lenders (lender liability), underwriters (asbestos claims and CERCLA/Superfund claims), and investors ("social investing").
5. Improving EP can reduce the "downside" risk or increase the "upside" potential for the client, and in turn the financier. EP can potentially reduce the risk of loss—the downside risk—for insurers, lenders, and investors. It can also help produce new products or open new markets, thus enhancing a client's potential for earnings and growth—its upside potential—for investors.
6. Insurance underwriters and, to a lesser extent, commercial lenders are furthest along in integrating environmental factors into their decision-making processes. Both underwriting and credit transactions generally involve a physical asset. EP has an impact on this underlying asset, giving both underwriters and lenders a direct material interest in this aspect of their corporate clients' business.
7. In contrast to underwriters and credit officers, investors are still in the early stages of understanding the potential impacts of a firm's EP on its FP. This difference is due, in part, to the limited availability of useful data.
8. Assessing the materiality of a firm's EP is especially complicated for investors due to the fact that no individual physical asset (e.g. real estate, a building, or piece of equipment) is involved (see item six above). Rather, the investor's stake is a financial instrument (e.g. stock, bond, commercial paper, etc.) in the overall company or project. In addition, investors must evaluate both downside risk and upside potential.
9. The financial services industry is beginning to realize that industry's EP in the aggregate can have spillover effects which in turn can negatively affect the financial performance of its corporate clients—even those who adhere to sound environmental management practices.

AREAS FOR FURTHER RESEARCH

To determine priorities for further research, each of the eight segments of the financial services industry included in this report were evaluated in terms of four factors:

- The overall relevance of environmental factors in its day-to-day operations
- The types of financial activities in which it is engaged
- The magnitude of its capitalization
- The extent to which its practitioners already assess clients' EP (in part) as a function of FP

Based on this analysis, it appears that the greatest untapped opportunity for identifying effective ways to integrate EP into assessments of FP lies in the area of investment decisions. The segments of the financial services industry engaging in investment activities are:

- Investment banks
- Property & Casualty insurance companies
- Pension funds
- Life insurance companies

A secondary priority might be research on asset-backed lending by commercial banks. While EP is occasionally integrated into such lending decisions, especially when a development bank—such as the World Bank—is involved, a clear standard for this segment has yet to emerge.

Although other areas could be considered, it appears that work with the financial services industry segments identified above would most likely result in the greatest impact for the effort expended.

2. INTRODUCTION

2.1. OBJECTIVES

This report was prepared to provide a common frame of reference for how the financial services industry (FSI) currently factors the environmental performance of firms in making underwriting, credit, or investment decisions—and how it might do so in the future. Specifically, the objectives are:

1. To assess broadly the extent to which the FSI currently recognizes the financial implications of its clients' environmental performance
2. To develop a working hypothesis regarding which segments of the FSI might have a material financial interest in their clients' environmental performance, within the context of their investment, credit extension, or underwriting decision-making processes
3. To provide an overview of environmental performance indicators (EPIs), both cited in the literature and used by industry, through which environmental performance might be measured or characterized

2.2. BACKGROUND

Virtually no financial institution paid attention to environmental factors in making business decisions until the 1970s. Before that time, environmental concerns were considered a relatively minor operating consideration, with no tie to financial performance. This attitude began to change—particularly for industrial concerns—as environmental regulations raised the cost of using environmental assets (such as clean water or land) as a production input or a dumping ground for production wastes.

As the impact of liability for past actions and direct costs for current compliance rippled through the economy, the financial services industry began to experience loan defaults, material losses as a result of insurance claims, liability associated with foreclosed property, and the loss of shareholder value. The underwriting and lending segments responded with internal risk reduction efforts (these included changes in underwriting and in credit due diligence procedures and practices) and calls for regulatory changes, such as the innocent landholder defense under CERCLA.

On the investment side, individual investors began demanding "green" investment options as part of a growing interest in "socially responsible" investing. The mutual fund industry met the demand, and institutional investors began to consider environmental concerns in making some investment decisions.

By the early 1990s, a growing number of corporations and investors recognized that improvements in environmental performance might be an indicator of overall financial performance. They realized that environmental performance improvements imply risk reduction and cost reduction, which have an impact on market share, rate of return, or both. For some firms, proactive environmental management is linked with opportunities to increase revenues by introducing new products or entering new markets with current products. However, investors were, and continue to be, limited by the lack of good methodologies to translate environmental information into useful investment criteria.

In September 1996, the International Organization for Standardization (ISO) issued ISO 14001, the first in a series of standards related to environmental management systems (see Part 3).

USEPA was interested in whether the certification of a firm's environmental management system under ISO 14001 might provide useful environmental performance data to the FSI. In February 1997, USEPA brought together a small group of commercial and investment bankers, bank regulators, and trade association representatives to discuss the potential value to the FSI's decision-making processes of information that might become available as firms became ISO 14001-certified. Although the dialogue did not produce a consensus on the potential or actual value of ISO 14001 information, the participants made three observations:

- The issue of environmental information and its use in financial decisions is broader than ISO 14001. Therefore, any future inquiry should consider a range of environmental performance indicators, including other environmental management system protocols and related environmental principles and practices.
- The FSI will not seriously consider the environmental performance of its clients unless and until there are ways such performance can be tangibly linked to financial performance.
- Environmental factors are not material in many financial transactions. To be grounded in the realities of the marketplace, any analysis of the FSI's interest in its corporate clients' environmental performance must necessarily take into account the diversity of both the types of transactions and the players in the industry.

USEPA is not alone in considering the linkage between environmental and financial performance. A number of government-sponsored and private initiatives are under way to address specific aspects of this linkage. For example:

- The United Nations Environment Program (UNEP) established initiatives involving the banking industry (1992, Exhibit B) and the insurance industry (1996, Exhibit A), which are now seen by the institutions involved as a partnership between UNEP and themselves.
- In 1995, the United Kingdom established a forum known as FEMAS (Financial Eco-Management and Audit Scheme, Exhibit D) to discuss industry concerns.
- The European Commission is also examining the role of corporate environmental performance in FSI decisions and recently released a report (Exhibit C), similar in nature to this document, describing how financial institutions throughout the European Union are engaged in looking at environmental risks.

Numerous efforts are also underway within the private and nonprofit sectors:

- The Aspen Institute (Exhibit M) is coordinating an ongoing dialogue among American investors and large industrial corporations to explore ways to improve environmental communications between industrial companies and the investment community.
- CERES (Exhibit E) explores corporate environmental reporting and how various stakeholders from around the world—including industrial companies, financiers, governmental representatives, nonprofit representatives, and other interested parties—can help facilitate the simplification and standardization of the world's growing array of reporting protocols.
- The Environmental Bankers Association and Mortgage Bankers Association have both established internal, members-only working groups on various issues facing members.
- The New York Society of Securities Analysts has created a group of members to examine the links between corporate citizenship and performance. As part of this initiative, the organization recently held a seminar series on environmental factors and activities related to its client bases (Exhibit L).

More detail on these complementary initiatives is provided in the following pages and in the exhibits at the back of the report.

2.3. APPROACH

To assess the current status of the FSI's efforts to link environmental and financial performance, the researchers conducted a broad electronic scan of the academic literature and major industry publications. The researchers searched citation indices to identify those articles with both environmental content (using such keywords as "environmental protection") and financial content (using such keywords as "debt," "credit," "equity," "investments," "bonds," and "underwriting"). They reviewed additional materials, including reports from nonprofit groups, non peer-reviewed research studies, quality research by industry experts, and government documents.

As part of this effort, the researchers also made contacts with firms providing environmental "screens" or data to the industry, and compiled an extensive bibliography (Exhibit N). The specific objective for this publication was limited to a review of publicly available information published as of December 1997. The bibliography is up to date up to that period; however, it is important to note that it provides just a snapshot of a rapidly evolving field.

In addition to conventional literature sources, the researchers examined the following areas for publicly available information, including

- Current product offerings available to industry
- Environmental reports published by corporations and financial institutions
- Environmentally-oriented products offered by the FSI
- Government documents
- Research studies and reports prepared and published by various business, governmental, and environmental groups

As stated in the executive summary of this report, the researchers had a very specific objective for this publication, which was limited to a review of publicly available published information as of December 1997. The review was designed to consolidate current thought on how—and the extent to which—the private sector of the financial services industry includes measures of its clients' environmental performance in making investment, credit extension, and underwriting decisions.

The authors tried to avoid including information not easily available in written form and literature that did not clearly include an environmental component. As a result, conversations held with industry experts, personnel correspondence on the subject, pure financial literature, and internal financial institutions' documents not available in the public domain have been excluded.

2.4. ORGANIZATION

The body of this report is divided into three parts. In the first, Part 3, the authors explain *what* might be meant by the term "environmental performance," *why* performance from this dimension might matter to the FSI, *how* this concept might be measured, and the advantages and disadvantages associated with these measures.

Part 4 examines the three core financial decisions—underwriting, lending, and investing—and the various groups that make these decisions. Some historical background is provided on the role of environmental factors in the FSI's decision-making processes. The focus, however, is on *who* within the industry is using, or might find value in using, environmental performance as a factor in its financial decisions.

Part 5, the final part of this report, identifies key findings of the research and discusses potential areas for additional study.

The report is intended for two audiences: those with a background in finance who may have limited experience with environmental matters, and those with a background in environmental policy who may be new to the financial services industry. Rather than try to address gaps in the audiences' backgrounds through the text, the authors have provided supplementary material in endnotes, tables, and exhibits.

3. MEASURING ENVIRONMENTAL PERFORMANCE: WHAT, WHY AND HOW

3.1. INTRODUCTION

Linking a firm's environmental performance to its financial performance requires a set of environmental performance indicators (EPIs)—that is, generic indicators that assess a firm's interaction with the environment.⁴ To be useful, these indicators must at the least be widely reported, credible, consistent over time, and timely.

Optimally, such a generic set of indicators would facilitate comparisons between firms and across industries.⁵ The financial services industry could then take the analysis one step further and assess how the use of particular indicators varies with the type of financial decision. For instance, the industry could evaluate whether some indicators are more useful in investment decisions, while others are more useful in credit decisions.

This part of the report describes the progress that is being made in developing EPIs. Specifically, the focus is on the what, why, and how of environmental performance (EP):

- What is meant by EP (Section 3.2)
- Why EP is, or might be, relevant to certain types of FSI decisions (Section 3.3)
- How EP can be measured and the problems that may arise when various EPIs are applied to FSI decisions (Section 3.4)

3.2. WHAT IS EP?⁶

Just as there is not a single definition of financial performance,⁷ there is no single definition of environmental performance. Any assessment of EP depends on several factors: the nature of a firm's interactions with the environment, which varies along industry lines; the reason environmental performance is reported; and the intended audience for the reported information. Not surprisingly, various entities have defined environmental performance and EPI in terms relevant to their own situations.

Here are just a few of the many ways of defining or conceptualizing environmental performance. This list is not meant to be exhaustive or normative; it is intended to illustrate the wide range of current definitions.⁸

ISO 14001. ISO 1400 defines EP as "the measurable results of the environmental management system, related to an organization's control of environmental aspects based on its environmental policy, objectives, and targets."⁹

ISO 14031. ISO 14031: Evaluation of Environmental Performance, now in its final draft, does not set hard standards of performance, but establishes a protocol for the evaluation process. This protocol also defines EP in management terms, as representing the "results of an organization's management of its environmental aspects," where the environment is defined as "surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interaction."¹⁰ At present this is one of the most widely accepted definitions of EP.

United Nations Environment Program. UNEP is working to standardize corporate environmental reports and evaluate them in terms of their reporting on five areas of EP, with 50 sub-areas and multiple indicators. Those areas are: management policies and systems, with 12 sub-areas; input/output inventory, with 18 sub-areas; finance, with 5 sub-areas; stakeholder relations and partnerships, with 10 sub-areas; and sustainable development, with 5 sub-areas.¹¹

World Business Council for Sustainable Development. The WBCSD suggests that investors assess corporate EP in terms of six components of "eco-efficiency:" reducing the energy inputs to, and requirements of, goods and services; reducing toxic dispersion; enhancing material recyclability; maximizing sustainable use of renewable resources; extending product durability; and enhancing the functionality of goods and services.¹²

Coalition for Environmentally Responsible Economies. The CERES principles "establish an environmental ethic with criteria by which investors and others can assess the environmental performance of companies." Signatories pledge to meet objectives in 10 areas: protection of the biosphere, sustainable use of natural resources, reduction and disposal of wastes, energy conservation, risk reduction, safe products and services, environmental restoration, informing the public, management commitment, and audits and reports.¹³

Many other standards, definitions, and approaches have also been published and proposed. A partial listing of the worldwide initiatives focusing on EPs is attached as Exhibit F. (This listing is an extract from a report prepared by CERES and the Tellus Institute in the summer of 1997.)

Since each economic sector relies on and uses assets differently, the importance of EP and the type of EP that is material to FSI decisions varies by industry. For instance, the costs of managing compliance with air, water, and hazardous waste regulations is significantly more important for petroleum refiners than for catalog retailers or resort hotels. All, however, may be concerned with their customers' demands for "greener" products and processes.

Due to the wide range of potential environmental impacts associated with any particular industrial activity, and because activities differ among industries, it has been difficult for corporate managers or the FSI to select a *single* set of EPIs that effectively measure current EP.¹⁴ The tension between standardization of indicators and industry specificity is discussed below (Section 3.4.6).

Demand for EP information has primarily come from three sources:

- Local communities concerned about hazards of emissions, perceived or real, from facilities located in the community (prompting the "right-to-know" laws)
- Environmental regulators
- The broader community of environmental scientists interested in potential environmental impacts of industrial activity

The use of environmental information by the FSI is a more recent development and has involved adapting existing data sources for use in financial decisions. Stakeholder concerns have been a factor in stimulating the growth of Corporate Environmental Reports (CERs).¹⁵

Given this variety, the way the FSI uses the data will ultimately determine which aspects of EP are relevant. It may be prudent for an *investment manager* to consider performance on all the indicators of eco-efficiency listed above; an *underwriter* or *credit officer*, however, may only be interested in a subset. A firm may improve on one indicator (e.g., toxic releases to air) and regress on another (e.g., nutrient releases to water)—but neither may be material to a particular financial decision. Furthermore, the EPIs that are relevant to a financier's evaluation may or may not be the same as those that are relevant to a governmental representative or environmental or community group.

It appears that the key issue for integrating environmental factors into FSI decisions is to determine which of the many aspects of EP are relevant to firm-level financial performance within a particular industry for a particular financial decision.

3.3. WHY FIRM EP MAY MATTER IN FSI DECISIONS

Satisfactory environmental performance may reduce a firm's *downside risk* for underwriters, lenders, or investors, and/or increase the potential for *upside gains*, measured in terms of sales, profits, market share, or valuation of a firm's freely traded securities. One or both of these potential sides is identified throughout the literature reviewed for this report.

Section 3.3.1 identifies ways that a firm's environmental performance can reduce the downside risk of financial decisions, while Section 3.3.2 identifies opportunities for upside gains. These lists are not meant to be exhaustive, and the examples cited will not all apply to any particular firm. [The use of these indicators as a composite environmental screen to guide investment decisions is discussed in Section 4.4.3.]

3.3.1. The Downside: Risk Reduction

Lack of attention to environmental matters may result in poor environmental operating performance, which can have a range of negative financial impacts on the firm, as well as on its insurers, lenders, and investors. Poor EP may:

- Create a liability relating to the contamination of land, due to persistent pollution or an accidental release¹⁶
- Create a liability for accidental releases to air or to water¹⁷
- Increase the cost and/or decrease the availability of Environmental Impairment Liability Insurance¹⁸
- Expose the firm to compliance penalties, mandated shutdowns, and/or more stringent regulations¹⁹
- Detract from the marketability of the firm's products²⁰
- Reduce investors' valuation of the firm's earnings based on the investors' perceptions of the firm's performance and prospects²¹
- Increase the firm's exposure to regulatory risk: the risk that future regulations will devalue the firm's assets (for example, environmental regulation of coke ovens in the steel industry); or the risk that future regulations may retroactively penalize a firm for past EP (for example, CERCLA) or require rapid – and therefore costly – compliance activities

On the other hand, improving EP can reduce the risk that the firm's operations, cash flows, earnings, capital spending decisions, or market presence will be negatively affected by such conditions.

3.3.2. The Upside: Productivity Benefits

A growing body of literature asserts the importance of managing EP as a strategic element of business success, rather than as a staff function limited to regulatory compliance or responding to stakeholders. A number of factors have contributed to this change in attitude:

- In 1989, the Exxon Valdez incident prompted the creation of CERES, the Coalition of Environmentally Responsible Economies. CERES member firms adhere to a set of principles regarding the environment.²²
- The first Toxics Release Inventory (TRI) data (from the 1987 reporting year) was released in 1989. TRI proved a revelation to senior company management who saw releases to the environment as "waste" and hence an indicator of production inefficiency.²³
- In a widely noted 1991 *Scientific American* article, Harvard economist Michael Porter advanced the notion that stringent environmental regulation could be a source of national competitive advantage.²⁴ Other academic researchers have also argued that proactive management of environmental concerns is a potential source of competitive strength for the firm.²⁵
- In 1992, the United Nations convened the second global conference on the environment in Rio de Janeiro. At that time, Swiss industrialist Stephen Schmidheiny launched the World Business Council for Sustainable Development, an organization devoted to moving beyond the notion of EP simply as a compliance-driven requirement and to establishing a link between EP and FP.²⁶

Improving EP may generate benefits that go far beyond mitigating the downside risk. Frequently cited benefits that may accrue for a firm from improvements in EP include:²⁷

- Reducing the costs of environmental compliance—particularly in such areas as hazardous waste management—and increasing profitability²⁸
- Easing relations with regulators, reducing costs of regulatory transactions²⁹
- Increasing the yields associated with certain production processes (such as reducing benzene emissions from a refinery that sells benzene) to reduce potential loss of revenue³⁰

- Reducing the costs of product input, including energy, as processes become more efficient³¹
- Increasing the marketability of existing products where EP is a criterion in product selection³²
- Enabling the firm to charge a premium price for "certified" processes or products³³
- Providing opportunities to expand the firm's product line to include "green" products, replace a product with a higher value-added service, or market environmental services³⁴
- Stimulating productivity improvements or product quality improvements with associated benefits to profitability and market share³⁵
- Producing a wider market for the firm's stock³⁶

3.3.3 Summary Questions

Financial analysts face a series of questions in assessing the financial impact of EP either in terms of downside risk reduction or upside potential. Such questions include the following:

- What financial impacts attributable to EP are likely to accrue and to which industries, and how does the extent of the impact differ by industry?
- Do financial impacts attributable to EP change over time? For instance, investors may choose to invest in the firm that is the environmental "best in class" in a particular industry. If the EP "floor" is raised across an industry, does being "best in class" still matter for investment decisions?
- Is the potential financial impact material, and in what way? Good EP may have a minor impact on costs, but may materially affect sales if demonstration of good EP is required as an element in vendor pre-qualification.
- Do measures of firm-level EP exist? Are reporting vehicles available to capture the financial impact of firm-level EP?

An overview of some of the available environmental performance indicators (EPIs) is provided in Section 3.4. Part 4 explores the process of converting these measures into "screens" for FSI decisions, either to screen out firms with poor EP or to identify firms whose superior EP may be associated with upside gains.

3.4. HOW TO MEASURE EP

3.4.1. Introduction

A wide range of EPIs is being used by the reporting frameworks being developed. Some define EP solely in management terms, while others are focused on operating measures.³⁷ Some definitions use a broad range of categories and indicators while others are very specific. Some EPIs are qualitative and some are quantitative.

This discussion of EPIs and their potential use by the FSI in evaluating a firm's environmental performance is grouped into four generic categories:³⁸

- Overall strategy or policy regarding the environment
- Generic environmental management practices designed to implement the overall environmental policy
- Specific operating practices and/or decisions related to product design and production technologies
- Measures of environmental operating performance (EOP)

Environmental performance can be assessed in terms of specific indicators within each group or through some combination. As noted earlier, the financier's choice will depend on a number of factors, the most important of which are the industry and the type of financial decision involved. This section provides examples of EPIs within each category and identifies potential concerns regarding their use for financial decisions.

Table 1 on the following page provides a summary of the various types of indicators. Examples have been taken from numerous sources, including the UN *Engaging Stakeholders* report;³⁹ the World Resources Institute's report, *Measuring Up*;⁴⁰ the Tellus organization's working paper, *Green Metrics: A Status Report on Standardizing Corporate Environmental Reporting*;⁴¹ and the Investor Responsibility Research Center inventory of EPIs (See Exhibit I).

Table 1: Overview of Four Categories of EPIs (Examples provided in each category are drawn from multiple sources as noted in the text, with substantial overlap among the lists. Again, the choice of a relevant indicator or group of indicators for use in FSI decisions will depend on a number of factors.)

	Comments
EPI Category 1 – Strategic Position/Policy	
Integral part of marketing strategy <i>Examples: organic farming, sustainable wood production</i>	Tends to be limited in value to certain industries
Adherence to outside codes <i>Examples: CERES Principles, Responsible Care</i>	Cross-industry application
Environmental policy statement <i>Examples: policy statement, single global corp. standard</i>	Cross-industry application No guarantee of performance
EPI Category 2 – Management Practices	
Environmental management infrastructure <i>Examples: Chief Environmental Officer, rank, # of staff</i>	Cross-industry application No guarantee of performance
Environmental auditing <i>Examples: frequency, coverage, public access to results</i>	As above
Environmental cost accounting <i>Examples: use of life cycle cost analysis, full cost accounting</i>	As above
Environmental management systems <i>Examples: TQEM, ISO 14001 certification</i>	As above
EPI Category 3 – Product Decisions and Operational Practices	
Product Design/Production Technology <i>Examples: recycled content, product recyclability, EP of product (e.g., energy use), packaging, "chemical-free" processes</i>	Tends to be industry and product specific
Input Decisions <i>Examples: technical decisions, vetting of suppliers/contractors</i>	Tends to be industry and product specific
Expenditures <i>Examples: investment in plant/equipment for environmental protection, environmental quality assurance, R&D</i>	Increasingly difficult to track as firms integrate environmental protection into broader technology decisions
EPI Category 4 – Environmental Operating Performance	
Inputs <i>Examples: use of energy (nonrenewables), nonrenewable materials, unsustainable use of renewables, toxins, water</i>	Cross-industry application, but same measures not equally relevant No mandated data source
Chemical Releases (Outputs) <i>To air – "Greenhouse gases" (CO₂ and equivalents), stratospheric ozone depleters (CFC-11, etc.), acid rain precursors (SO₂), smog precursors (VOCs and NO_x), toxic releases (HAPS) To land – hazardous and solid wastes To water – nutrients, BOD, toxins</i>	Cross-industry application, but same measures not equally relevant Only toxins have mandated data source, and only for some industries Issue of timeliness
Stewardship of Habitats and Ecosystems <i>Examples: programs to protect habitat, to transplant endangered species by construction, to fund conservation of habitats to offset those affected by company activity</i>	Cross-industry application, but same measures not equally relevant No mandated data source or consistent framework for reporting
Regulatory Compliance <i>Examples: instances of significant non-compliance, enforcement penalties/permit denials, number/severity of reported pollution accidents (e.g., spills), environmental legal proceedings</i>	Various economic sectors subject to widely varying levels of regulatory interest and activity

3.4.2. EPI Category 1: Environmental Strategy or Policy Statement

Description. The first group of EPIs deals with how the firm has positioned itself with respect to the environment, both internally and publicly. In some cases, a firm's overall strategy has an inherent environmental component;⁴² in other cases, the firm may make its environmental position consistent with its overall market strategy.⁴³

More typically, firms articulate their strategic position by adopting the CERES principles or making an explicit environmental policy statement (published in the annual financial report or annual environmental report). In other cases, an industry association may take the lead, positioning the industry as a whole. For instance, after the catastrophic release of toxic gases from the Union Carbide facility in Bhopal in 1984,⁴⁴ the Canadian Chemical Producers Association began the Responsible Care Program; it has since become a condition of membership for the US Chemical Manufacturers Association.⁴⁵

Potential Use in Financial Decisions. This type of indicator has the advantages of simplicity and comparability. An analyst can readily ascertain, for example, whether or not a firm has publicly declared its environmental policy. Although it is not a measure of environmental operating performance, such an indicator may be a useful surrogate where lack of data makes environmental operating performance difficult to assess.⁴⁶

Policy statements do not necessarily translate into financial benefits or improved EP, nor does the absence of such a policy or statement necessarily imply poor EP. However, financiers can use the existence of a strategy or policy statement either as a binary activity (with existence representing a positive action and non-existence treated as a neutral event), or they can grade the policy or strategy based on a set of indicators appropriate to the industry and score the policy or strategy on a sliding scale for incorporation into the financial analysis model.⁴⁷

3.4.3. EPI Category 2: Environmental Management Practices

Description. The second group of EPIs consists of generic environmental management practices. Such practices may cover a range of activities, including:

- Conducting periodic environmental audits of a firm's facilities⁴⁸
- Ensuring that the accounting system accurately reflects environmental costs⁴⁹
- Producing a CER⁵⁰
- Adopting a plan to ensure total environmental quality management
- Having practices at some or all of a firm's facilities certified as meeting international standards of the ISO 14000 series

These practices are sufficiently generic to be applicable to every economic sector, from agriculture to manufacturing or services.

In most firms, environmental management began as a separate staff function, narrowly focused on regulatory compliance. The first attempts to integrate environmental considerations into broader management concerns emerged from firms' efforts to develop systems to improve product and service quality. CERCLA liability then stimulated the development of an industry that provides environmental audits to alert firms to potential liability. In addition, sharp increases in hazardous waste disposal costs in the late 1980s heightened the need for a cost accounting system that accurately associates environmental costs with the productive activities that generate the waste.

In the late 1980s, firms began to consider ways to manage environmental compliance more systematically—and to integrate environmental management with the firm's overall management.⁵¹ This shift was prompted by two key factors: increasingly complex environmental regulations⁵² and a change in attitude among business leaders, who began to see EP as a source of competitive advantage and to seek ways to manage it.⁵³

To meet the need for better management tools, environmental management systems (EMS) were developed to guide a firm's interactions with the environment. An EMS is a system designed to promote compliance with regulations, ensure clarity of organizational policies, reduce financial risks related to environmental factors, and ensure that sufficient corporate resources are devoted to environmental management.

The development of standards for generic environmental management practices was led by European governments, which made Eco-Management and Audit Scheme (EMAS) certification a requirement for access to European Union markets. In 1996, the ISO began to release the ISO 14000 series of environmental management protocols. ISO has three objectives in creating these environmental protocols: "to encourage a common approach to environmental management, to strengthen a company's ability to improve and measure its environmental performance, and . . . remove trade barriers."⁵⁴ Due to the costs associated with obtaining ISO 14001 certification, firms may decide to certify themselves as corporations or on a plant-specific basis; some firms have indicated a preference for their existing environmental management systems.⁵⁵

Potential Use in Financial Decisions. This group of performance indicators includes a range of measures, each with potential problems for use by the FSI. CERs may not be substantive, and thus not perceived as credible (Section 3.4.6). The presence of an environmental auditing program may be a sufficient measure of EP for an underwriter, yet insufficient for an investor/lender concerned about the firm's exposure to regulatory risk.

A firm's certification under ISO 14001 (or reliance on a comparable EMS) goes a step further, providing a basis of comparison on overall *management* performance in relation to the particular environmental factors facing a firm within a given industry. However, there is not yet a sufficient number of ISO 14000 certified firms or sufficient operating experience to track the relationship between certification and financial performance.⁵⁶

Adoption of EMS has the potential to serve as either a downside or upside indicator. As a downside indicator, the existence of an EMS may reduce the likelihood of incurring an environmental liability, reduce the cost of acquiring Environmental Impairment Liability Insurance (EIL), increase the "numbers of insurers willing to write a company's coverage,"⁵⁷ and ease relations with a regulatory agency.⁵⁸ As an upside indicator, an EMS may indicate overall productivity⁵⁹ or the ability to gain access to particular markets.⁶⁰ The importance of each of these factors is likely to vary based on firm size and industry group.

The weaknesses of generic management practices as an indicator of EP are similar to those affecting policy statements. While it is reasonable to expect that following protocols will improve the likelihood and reduce the cost of compliance, there is no guarantee that the firm will be proactive and achieve productivity or other upside benefits.⁶¹

Finally, the lack of a CER, an EMS, environmental accounting, or an environmental audit schedule does not necessarily imply poor EP. For some industries, adopting these generic management practices may be unnecessary as their EP can be gauged using more direct measures of operating practices (Category 3) or performance (Category 4).

3.4.4. EPI Category 3: Environmental Operating Practices (Production Technologies and Product Design/Content)

Description. Operating decisions on product design and content and on production technologies may also be used as indicators of EP. The World Business Council for Sustainable Development (WBCSD) is promoting the use of indicators of "eco-efficiency" that are primarily oriented to assessing operating practices—that is, how well products are designed to:

- Reduce energy use
- Maximize recyclability
- Extend durability
- Enhance the functionality of goods and services⁶²

Potential Use in Financial Decisions. Comparisons across industry groups are less meaningful because of potentially vast differences in products; however, for some industry groups, adoption of particular practices is likely to be an important indicator of EP. In particular, certification of practices may be useful where there is a lack of governmental

regulatory data. For instance, while there may be no government-mandated data on toxic chemical use on farms, a farm certifying its practices as "organic" might be presumed to have no such releases. Similarly, many consumers and environmental groups see value in forestry firms receiving certification according to *specific* forestry practices, rather than adherence to *generic* management standards.⁶³ On the manufacturing side, a firm may choose to disclose that its processes are, for instance, "cyanide-free," "chlorine-free," "phosphate-free," or "mercury-free."

With some exceptions,⁶⁴ information to make comparisons on products or operating practices is not publicly mandated. Availability and quality of data depends on how fully a firm discloses these decisions in its corporate financial or environmental report. The credibility of disclosure is also a potential issue (Section 3.4.6).

3.4.5. EPI Category 4: Environmental Operating Performance

Description. In the United States, the most commonly used indicators of EP are those that rely on information required by USEPA regulation: data on contaminated sites, the number and size of chemical spills, compliance history, etc. The volume of operating performance data was expanded substantially in 1986, when the Superfund Amendments and Reauthorization Act (SARA) required manufacturing firms (SIC 20-39) to report releases of several hundred chemicals to the air, water, and land. Since 1987, the first year firms submitted their TRI reports, the requirement has been expanded to cover more industry groups and more chemicals, and to require reports at lower thresholds of release.

With the exception of TRI data, a great deal of governmental information on EP has been difficult for the FSI to obtain. Since it has generally been collected by state environmental agencies authorized to administer USEPA regulations, the data for a corporation with multiple manufacturing facilities may be found in multiple state databases.

USEPA recently launched the "Envirofacts WareHouse"⁶⁵ initiative to increase the availability of all the data it has on firm performance. When the information source is fully developed, it will include data on inspections, significant non-compliance violations (as opposed to minor paperwork violations), enforcement actions and penalties, pollution releases (TRI), pollution spills, a toxicity-weighted pollution release, a pollution to production ratio, and demographic information on neighboring communities.⁶⁶ The web site maps out environmental data for more than 700,000 sites that handle potentially dangerous chemicals and identifies their harmful substances. Users can access information on the sites by name, address, or zip code.⁶⁷

Potential Use in Financial Decisions. Changes in these measures can be used to indicate the potential for downside risk reduction and the potential for upside gains (Sections 3.3.1. and 3.3.2). With respect to downside risk, a firm that eliminates emissions

of hazardous toxins because of plant-wide source reduction has reduced the risk of insurance claims, potential contaminated land collateral, and future environmental regulation of those toxins. Upside gains from reduced emissions include greater yields and lower input costs (including the cost of waste disposal).

Publicly mandated data has three limitations, however:

- While there is information compiled on other environmental concerns, such as nutrient releases to rivers and greenhouse gas releases,⁶⁸ the data, is not as extensive or as widely collected across economic sectors as data for toxic chemicals.
- Public data provides information only for firms that are subject to environmental regulation, thus excluding major industries such as agriculture from the same types of EP scrutiny.
- As a result of reporting lag times, by the time data becomes available, it no longer reflects current status and/or practices, which diminishes its relevance for decision-making.

Voluntary data disclosure in CERs may fill this gap to some extent, but raises questions of credibility (Section 3.4.6).

3.4.6. Issues for FSI Use of EPIs

The various initiatives to standardize corporate environmental reporting have identified five data problems of particular concern to users of EPIs: availability, credibility, standardization, industry specificity, and timeliness.⁶⁹ These data problems prevent researchers and analysts from more fully investigating the links between EP and FP and from developing the constructs necessary to make environmental data meaningful over the full range of financial decisions. Each of these problems is briefly noted below.

Availability of Data, Particularly Quantitative Data. The lack of information availability was noted by multiple sources as an important problem in furthering the integration of EP into financial decisions. As noted above, USEPA's data does not provide the full array of potential information that a financial analyst may want, either for all pollutants or for all industries. Moreover, USEPA does not have jurisdiction over the full range of environmental impacts that might be associated with a firm's operations.⁷⁰ The literature reviews did not find any discussion of the range of publicly available data being collected by other federal agencies—such as the Department of Interior (e.g., federal timber leases by firm), the Department of Energy (e.g., power production) or the Department of Agriculture (e.g., pesticide use on farms)—that may be of value to the FSI. It appears that the FSI is either unaware that this information is available or believes it is not material for consideration in its decision-making processes.

CERs may fill these availability gaps. The growing number of these reports has created additional demand for more uniformity among CERs (see the standardization discussion below) and for more quantitative information on activities for which no regulatory mandates exist, such as energy use, water use, and greenhouse gas emissions.

Reliability of Data. Potential users of EPIs are concerned about the reliability of both publicly mandated data and data from voluntary disclosures. For example, one concern to EPA, individual states, and the industry is the accuracy of the data that will be found at EPA's new Internet site, "Envirofacts Warehouse."⁷¹ A 1995 report by Global Environmental Management Initiative (GEMI) and Investor Responsibility Research Center (IRRC) showed that the credibility of voluntary decisions hinged on "a balanced tone and the presence of numerous environmental performance indicators."⁷² A broader analysis of CERs, also conducted in 1995, suggested creating a formal evaluation process for reports that would recognize leading edge practice and reward firms generating the most credible reports.⁷³

Need for Standardized Data. Various initiatives⁷⁴—including the Public Environmental Reporting Initiative, the UNEP Engaging Stakeholders process, the Global Environmental Management Initiative, the Global Reporting Initiative (CERES), and the Business Council for Sustainable Development—are helping to standardize corporate environmental reporting. The Tellus Report identifies about two dozen such initiatives worldwide.⁷⁵ The dilemma for the firm is that the development and disclosure of information is costly, and may force firms to disclose information that is immaterial to their EP or FP (e.g., asking software manufacturers to disclose greenhouse gas emissions).

A recent report by the Tellus Institute indicated that standardization was needed in terms of what information industry is reporting on EP and environmental programs, how data might be normalized (e.g., emissions per dollars of sales), and the level of reporting unit (e.g., firm, plant, process).⁷⁶

Need for Industry-Specific Measures. Some researchers have identified the importance of establishing the link between EP and FP on an industry-specific basis. They note that the results of multi-industry quantitative analysis may be confusing EP impacts with industry impacts.⁷⁷ While industry-specific measures may be possible in some industries, for others the diversity of products may make that level of analysis difficult.⁷⁸ The need for industry-specific measures appears to be at odds with the desire of some analysts for standard data in making investment decisions.

Timeliness of Data. TRI data, in particular, has attracted the attention of researchers attempting to show the link between environmental and financial performance.⁷⁹ However, reporting lag times mean that TRI data is available about two years after the releases were made. In areas of rapidly changing technologies, such as the shift to waterborne paints and non-solvent cleaning agents, older data may not reflect the current environmental operating performance of the firm. Similar problems exist with data on hazardous waste generation. Finally, enforcement actions may take time to process, implying that data on fines and other penalties may relate to practices that are no longer used by the firm.

4. MAKING CORE FINANCIAL DECISIONS:

CURRENT USE OF EPIs

4.1. INTRODUCTION

Each segment of the financial services industry participates in one or more of three core financial services: underwriting, credit extension, and investment. Part 4 assesses the extent to which EPIs are used or might be used by various FSI segments in making decisions that affect a firm's access to—and cost of—insurance, investment capital and/or credit.

This report focuses on eight segments of the FSI:

- Commercial banks (the largest providers of credit)
- Mutual funds (with US \$4.7 trillion under management)⁸⁰
- Pension funds (with US \$4.5 trillion under management)
- Life insurance companies (with US \$2.3 trillion in assets)
- Property and casualty insurance companies (with US \$1.4 trillion in assets)
- Venture capital firms (with assets of US \$48 billion)
- Foundations (with US \$200 billion in assets)
- Investment banking

The first five segments, the largest in the industry, were included because they are the largest segments of the FSI. Venture capital firms were included because they focus on investing in very early stage innovation (environmental or otherwise). Foundations were included because they make investments and grants with virtually no governmental constraints, and therefore have freedom to innovate in terms of investment criteria (e.g., use screens that incorporate environmental factors); have specific mandates in their incorporation documents to help facilitate activities related to the environment; and control substantial capital. Finally, investment banking was included as a result of its important advisory role to corporate clients as well as other members of the FSI.

Other segments of the FSI—such as savings and loan associations, credit unions, or commercial finance companies—were not included in this report because prior research indicated that environmental factors do not materially affect these segments at this time, nor do they seem likely to in the future.⁸¹

The exhibits on the following pages summarize this information. Table 2 lists each segment, identifies representative firms within that segment, describes the segment's role, and indicates the extent to which the segment has past experience with EP. For reference, Table 3 outlines key events, regulatory and otherwise, that have affected the provision of FSI's three core financial services. These events will be discussed throughout Part 4.

The FSI segments vary in terms of the time horizon for financing activities (e.g., long-term investing vs. short-term credit extension); targeted rate of return; tolerance for risk, size, and the importance attached to the interests of a corporate client's stakeholders;⁸² and, in some segments, level of expertise on environmental factors. In particular, underwriters and lenders have experienced the impact of CERCLA liability for contaminated site remediation. Both are now concerned about the potential long-term impacts associated with projected global climate change as it relates to underwriting policies and collateral asset values.

Part 4 is divided into three major sections:

- Section 4.2 describes how the process of insurance underwriting has dealt with the downside risk associated with the poor EP of its clients. (Insurance underwriters were the first to feel the financial ramifications of poor firm-level EP.)
- Section 4.3 describes how credit officers have addressed environmental concerns. (As in underwriting, the primary focus to date has been on reducing the downside risk of poor firm-level EP as it relates to loan collateral and operating cash flows.)
- Section 4.4 describes how investment managers and academic researchers are assessing both the downside impact of poor EP, and the potential for good EP to act as an indicator of upside potential.

Within each section, an overview of the industry is provided, followed by an industry-wide discussion of concerns relating to the integration of EP into financial decision-making. Finally, summary observations are made on the current and potential role of EPs in that particular decision-making process (underwriting, credit extension, or investment).

Table 2: Overview of the Eight Segments of the FSI

Financial Role	Past Exposure to Environmental Factors
1. Investment Banks	
<i>Examples: Merrill Lynch, Salomon/Smith Barney, Goldman Sachs</i>	
<i>Primary Business:</i> Advise corporate clients on investments and financing options	Indirect exposure through client concerns
<i>Secondary Business:</i> Invest and/or extend credit for its own account	Loss of investment value or lender liability on credits with real estate/asset collateral
2. Pension Funds	
<i>Examples: California Public Employees' Retirement System (CalPers), College Retirement & Equity Fund (CREF)</i>	
<i>Primary Business:</i> Invest employee pension fund contributions	Some pro-environmental activism (e.g., voting proxies) but generally constrained by fund's governance guidelines
3. Foundations/Endowments	
<i>Examples: Ford, MacArthur, Rockefeller</i>	
<i>Primary Business:</i> Make grants to causes and initiatives that are consistent with foundation's mission	Some pro-environmental activism: -Voting proxies -Initiating proxies on environmental issues -Investing in socially responsible/green companies and/or funds
<i>Secondary Business:</i> Invest endowment funds to support grant making	
4. Mutual Funds	
<i>Examples: Fidelity, Vanguard, Templeton</i>	
<i>Primary Business:</i> Invest the capital provided by mutual fund investors	Targeted response to consumer demand for environmentally-screened funds
5. Venture Capital	
<i>Examples: Hambrecht and Quest, Schooner Capital</i>	
<i>Primary Business:</i> Provide startup or first stage capital to cash-poor new business ventures	Varies with each investment: as a key shareholder/member of management, face the same issues that a company faces
6. Commercial Banks	
<i>Examples: Chase, Citicorp, Bank of America</i>	
<i>Primary Business:</i> Extend credit	Prior to foreclosure: loss of cash flow on loans with real estate collateral
<i>Emerging Secondary Business:</i> Invest	After foreclosure: exposure to CERCLA liability on loans with real estate collateral
7. Life Insurance	
<i>Examples: CIGNA, Prudential, MetLife</i>	
<i>Primary Business:</i> Underwrite life insurance for individuals	Prior to foreclosure: loss of cash flow on loans w/real estate collateral
<i>Secondary Business:</i> Invest and/or extend credit to provide for future cash needs	After foreclosure: exposure to CERCLA liability on loans w/real estate collateral
8. Property & Casualty Insurance	
<i>Examples: American International Group (AIG), Travelers Group</i>	
<i>Primary Business:</i> Underwrite P&C insurance policies for corporations and individuals	General Liability Policies: losses from liability for contamination and asbestos
<i>Secondary Business:</i> Invest and extend credit to provide for future cash needs	Environmental Impairment Liability Insurance: losses from poorly-defined underwriting in late 1970s; new wave of underwriting in 1990s Global Climate Change: concern about exposure to catastrophic risk; offering of catastrophic options etc. to other investors to spread environmental risk

Table 3. Overview of Key Events in the FSI: 1970-1998

Yr.	Business & Regulatory Events	FSI		
		Investing	Extending Credit	Underwriting
70	First Earth Day EPA created			
72	UN Meeting: Stockholm			
75				Environmental Impairment Liability Insurance (EIL) begins to be issued
76				First asbestos suits filed against Manville
77				EIL policies aggressively marketed
80	CERCLA establishes "joint and several liability"		Real estate industry collapse begins in TX, CA, and NY, resulting in massive foreclosures by life insurance industry	
82				Manville bankruptcy
84	Union Carbide, Bhopal HWSA requires corrective action at operating facilities			Industry pulls back on writing EIL because of losses
85	CMA: Responsible Care			
86	Reporting of toxic releases begins for Manufacturing SICs		World Bank issues guidelines on environmental exposure management	"Absolute pollution exclusion" introduced for General Liability Policies
88			World Bank issues environmental guidelines on asset-backed finance Maryland Bank and Trust Case - 1st case of lender liability for cleanup	
89	Exxon Valdez runs aground CERES formed	Socially screened mutual funds become common		EIL market reappears
90	CAAA tightens air pollution control		Fleet Financial found 100% liable for Superfund cleanup	
91	Michael Porter - environmental regulation as a source of competitive advantage			
92	UN Conference - Rio International Chamber of Commerce: Business Charter for Sustainable Development	IRRC offers standard EP data on industrial firms	UNEP Statement on Banking and the Environment signed EPA issues "lender liability rule" FDIC sends guidelines on environmental issues to all US banks	Hurricane Andrew - creates great P&C losses

	Business & Regulatory		FSI	
Yr.	Events	Investing	Extending Credit	Underwriting
93		SEC puts SAB '92 into effect requiring environmental liability disclosure	FDIC issues Guidelines on Environmental Risk Minimization ASTM E-1527- Standard Phase 1 Due Diligence for Real Estate Collateral Environmental Bankers Assn. Founded "Brownfield" development becoming more common	SEC puts SAB '92 into effect requiring environmental liability disclosure Insurance industry surprised by total EIL exposure
94			EPA's "lender liability rule" vacated 1 st Meeting - UNEP Global Banking and Environment (Geneva) First Global Study on Environmental Practices within the FSI (Lending)	Industry rating group downgrades CIGNA, AETNA, and Home because of EIL exposure
95		Introduction of special investment vehicle: selling insurance risk for catastrophes on stock exchange via options and futures	2nd Meeting - UNEP Global Banking and Environment (London) EBRD launches major effort in Eastern Europe to educate bankers on environmental risk management	UNEP Statement on Insurance and the Environment signed NAIC Footnote 24 announced, requiring full disclosure of environmental exposure
96	ISO 14001 released WBCSD: <i>Financing Change: The FSI, Eco-Efficiency and Sustainable Development</i>	Scudder Stevens/Storebrand Environmental Fund launched	Congress amends CERCLA/RCRA to reinstate "lender liability rule" Bank America signs CERES Principles International Finance Corporation issues handbook for banks in developing and transitional economies	UNEP Conference on the Insurance Industry and the Environment (5/96) Footnote 24 becomes effective
97	TRI expanded WBCSD: <i>EP and Shareholder Value</i>	National Provident Insurance (UK) releases "Carbon Indicator, etc." Swiss Bank Corp. Environmental Fund launched Aspen Institute Initiative started	3rd Meeting - UNEP Global Banking and Environment (New York) National Westminster (UK) launches preferred rate for EMS activities to middle market companies World Bank issues new project finance guidelines Credit Suisse becomes first bank to be ISO 14001 certified Swiss Bankers Association publishes draft standard EP reporting protocol for clients	
98	USEPA NACEPT convenes			

4.2. DOWNSIDE FOCUS: INSURANCE UNDERWRITING DECISIONS AND EP

4.2.1. Overview

Of the eight segments of the FSI, only property and casualty (P&C) insurance underwrites the potential financial exposure associated with claims from corporate clients.⁸³ A client's EP is examined when a policy is written, policy coverage is reviewed or bank financing is arranged.

P&C policies are normally written for one year. Until recently, all insurance policies were renewed—and, in theory, reviewed—every year by the issuer. A new multi-year product has been introduced, however, which provides the corporate client with the security not available with a single-year product.

The new product involves a new set of underwriting concerns, since the insurer is now committed for an extended period of time. Claims for losses are filed for various types of expenses, including direct expenses (property or personnel) of the insured, claims made against the insured by third parties, the lost revenue of a plant closing, the insured's legal costs associated with lawsuits and claims by the insured and third parties, and the cost or environmental restoration of natural habitat damaged in an incident.

Until the last few years, the primary focus of this industry has been on one issue: what does a client's EP indicate about the risk of incurring some type of environmental liability and filing an insurance claim for those losses? With the emergence of the possibility of global climate change, the industry's focus appears to be broadening to include a second question: to what extent does a client's EP contribute to global environmental problems which may, in turn, lead to claims filed by the client or other policyholders?

4.2.2. Industry's Experience with Environmental Matters

The P&C industry has more experience in dealing with environmental factors than any other segment. It has acquired this experience in four phases.⁸⁴

Phase 1: Environmental Impairment Liability Insurance: Initial Experience. In the mid-1970s, the insurance industry started to offer customers Environmental Impairment Liability Insurance (EIL). This product was developed in response to claims filed by corporate clients for environmental liability and asbestos-related problems.⁸⁵ A handful of underwriters identified this new market niche and wrote a fairly high volume of insurance up through the early 1980s. It soon became apparent to most underwriters that given the volume and size of the claims being filed, they did not sufficiently understand the costs and risks associated with these policies. Most underwriters stopped writing EIL policies.⁸⁶

Phase 2: General Liability Insurance & CERCLA. The industry's environmental exposure increased in 1980 when Congress passed the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLA created "retroactive, strict, joint and several" liability for the cleanup of contaminated sites. It became apparent that clients could make claims under their general liability insurance policy for cleanup liabilities established under CERCLA. In 1985, an "absolute" pollution exclusion clause was added to the nation's standard Commercial General Liability Policy. This clause effectively eliminate all environmentally related claims on newly issued policies. Although this clause has been included in most policies issued since 1985, there is still a substantial volume of claims being filed for policies written before 1985.

In 1993, the Securities and Exchange Commission required that corporations disclose potential environmental exposures.⁸⁷ In March 1995, the National Association of Insurance Commissioners required that P&C firms report their potential exposure to asbestos and environmental claims (a function of the potential exposure faced by their corporate clients), as Footnote 24 to their annual filing. The extent of reported disclosures prompted many in the P&C industry to increase reserves.⁸⁸

Today most insurance firms have large staffs focusing on how environmental activities and programs are related to environmental risks and the corresponding claims that are or may be filed.⁸⁹ The P&C's experience has given it the largest pool of knowledge and expertise within the FSI on how to quantify environmental risks and turn them into financially meaningful analysis.

Phase 3: EIL Insurance, Revisited. The second era of environmental insurance started in the late 1980s, when a few insurers—led by AIG (American International Group), Zurich Re, and Reliance—reentered the market. The new breed of EIL insurance is targeted at specific industries, carries clear limits of coverage, and carries numerous covenants that relate to the client's environmental practices, procedures, and management systems.

Further growth in the industry occurred in 1992, after Fleet Bank announced that it would require EIL insurance on all new commercial loans. This action was in response to Fleet's own Superfund liability, which resulted from a 1990 court decision concerning property acquired through foreclosure (See Section 4.3.2). While only three firms reportedly provided the type of coverage Fleet required in 1992, by 1994 it was reported that 19 firms offered or were developing appropriate EIL products.⁹⁰

The P&C industry is currently focused on understanding how assumed risks can be differentiated by clients' progress in improving environmental practices and activities. By differentiating risks, companies can offer products at lower prices to clients with "superior" EP. In addition to EIL insurance, insurance brokers offer risk management services and will provide "detailed reviews of operations" for clients.⁹¹ There has been some coverage in the trade press of the potential for industry to supplement its existing

information on a firm's EP using ISO 14001 certification as an underwriting screen.⁹² EIL insurance is becoming more widely available around the world, and has become a competitive product offering as prices continue to fall and coverage expands.

Phase 4: Environmental Risk to the Firm: Climate Change. The P&C industry has managed its exposure related to clients' EP through more sophisticated underwriting, more restrictive policy covenants, and the provision of risk management expertise to its clients. Now the industry is facing a broader challenge: the potential impact of global climate change (GCC) on all insured parties.

GCC is the hypothesized warming of the earth's atmosphere due to human releases of carbon dioxide and other greenhouse gases from the combustion of fossil fuels, among other factors. This warming is predicted to *destabilize* the climate, leading to more severe storms and more erratic weather. After Hurricane Andrew, which caused US \$15 billion in insured losses, the industry became concerned about the potential impact of GCC on storm events and subsequent insurance-related losses. Management of potential GCC-related claims is expected to play an increasing role in the refinement of the covenants and limitations in general liability insurance policies.⁹³ The potential for catastrophic losses related to GCC has also led the insurance industry to investigate ways of spreading this risk.⁹⁴ As with CERCLA liabilities, the reinsurance segment of the P&C business is expected to bear the brunt of exposure related to GCC.

The United Nations Environment Program (UNEP) launched its Initiative on Insurance and the Environment with a Statement of Environmental Commitment by the Insurance Industry, November 23, 1995 (see Exhibit A). As of January 1998, approximately 70 insurance companies, predominately European and Japanese, have signed the statement.⁹⁵ This partnership between UNEP and the signatories has sponsored two global meetings to date and created task forces focused on specific environmental concerns, such as climate change, that are particularly relevant to the insurance industry.⁹⁶

4.2.3. EP and Underwriting: Summary Observations

The US underwriting community represents possibly the single largest pool of expertise with respect to environmental concerns within the FSI. Underwriters appear to have developed the most sophisticated approaches to how the risk associated with EP and other environmental activities can be measured, quantified, and integrated into financial decision-making processes.⁹⁷ However, there is little information in the publicly available literature on how these firms actually evaluate the risks related to EP, or how that evaluation might vary by client industry group (e.g., underwriting guidelines for a paper mill versus a chemical plant). This is an area where primary research might be warranted.

Finally, there is little discussion in the literature on how this expertise might be used to address broader environmental concerns on either the underwriting or investing side of the business (Section 4.4.4).

4.3. DOWNSIDE FOCUS: CREDIT EXTENSION DECISIONS AND EP

4.3.1. Overview

The main providers of credit to corporations are commercial banks⁹⁸ and life insurance companies,⁹⁹ although investment banks¹⁰⁰ also provide some short-term credit to facilitate specific transactions. Commercial banks are the largest provider of private sector credit in the world and, within the US, are the most regulated segment of the FSI. Life insurance companies are primarily involved in real estate lending; they hold approximately 40 percent of all domestic commercial mortgages, with little involvement in other areas of credit extension.

The nature of the collateral is the primary variable that affects the materiality of EP in credit extension decisions. Credits can be secured by real estate (i.e., land), by real property (e.g., buildings, equipment, inventory), or as a general obligation of the firm.

For loans secured by land collateral, the primary concern is the contamination present in the land and groundwater that flows through it at the time of the property transfer—as well as the corresponding regulatory issues and costs that would relate to the cleanup of the property. A secondary concern is the additional contamination the borrower could add to the land and groundwater while it is in his or her possession. The presence of contamination can affect the value of the collateral and the foreclosure decision if the borrower fails to repay the loan.

For loans backed by other assets (e.g., manufacturing plants, resort hotels, equipment, etc.), the creditor is primarily concerned with how EP will affect the predictability of cash flows, and, secondarily, with the long-term value of the collateral. In particular, credit officers are concerned with the impact of regulations related to ongoing questions (e.g., carbon tax or required scrubbers for coal burning power plant) and of broader ecological concerns such as climate change (e.g., wind storms and the rising sea level for beach resorts) that may affect operations and collateral value.

In general commercial credit transactions, there is often little or no collateral. Many researchers claim there may still be an opportunity to use EP as a predictor of overall quality management and operating performance (Section 4.4.2), as well as the ability of the borrower to generate cash flow to repay the loan with interest.

In addition, lenders are concerned with how client EP reflects on their own accountability on environmental matters (Section 4.3.5).

4.3.2. Real Estate Securitized Loans

For real estate-backed loans, the focus regarding environmental risk has been on preserving the value of the real estate and on the obligations that the lender might incur with respect to contaminated real estate it acquires through foreclosure.

Until 1988, it was generally assumed that lenders did not have liability, under either CERCLA or state Superfund laws, for remediating contaminated real estate acquired through foreclosure. However, in 1988, Maryland Bank and Trust sold a parcel of land it had acquired in foreclosure 20 months earlier. The land was contaminated and required a cleanup effort. Under state Superfund law, the bank was liable for cleanup costs because it held the property too long to claim an "innocent landowner" exemption.¹⁰¹

In May 1990, Fleet Financial, through its subsidiary Fleet Factors,¹⁰² was held 100 percent liable for Superfund cleanup costs at a facility acquired from Swainsboro Paint through foreclosure. The 11th Circuit Court of Appeals in Atlanta Georgia, found that Fleet had had the potential to alter the operating practices of its client and was thus liable for the contamination.¹⁰³

Fleet responded by requiring new loans to carry Environmental Impairment Liability Insurance (Section 4.2.2). In 1992, USEPA issued a "lender liability rule" to shield lenders from liability under CERCLA.¹⁰⁴ This provision was vacated in 1994, with a court finding that USEPA had exceeded its authority in issuing the rule. In 1996, Congress addressed the problem directly with the passage of the Asset Conservation, Lender Liability, and Deposit Insurance Act of 1996 (Asset Conservation Act), which amended CERCLA and RCRA to protect lenders from "secured creditor liability." However, that protection does not extend to actions taken under state Superfund laws, or under certain lending circumstances.

In 1992, while issues of federal liability were being addressed, the Federal Depository Insurance Corporation (FDIC) issued guidelines requiring lenders to develop programs for environmental risk management (ERM).¹⁰⁵

In the wake of the 1989 Maryland Bank & Trust case, Bank of America, Chemical Bank, and National Westminster became the first lenders to hire officers to deal with environmental risk.¹⁰⁶ Now, most major lending institutions, regardless of their FSI segment, have technical (engineering, scientific, or both) and legal experts on staff or on retainer to manage environmental risk and other due diligence work related to credit extensions with real estate as collateral. A large consulting industry performs environmental site reviews on behalf of financiers and developers, and several electronic database services exist to gather data on site contamination and prior usage for specific pieces of property.¹⁰⁷

Both commercial banks and life insurance companies have continued to refine real estate due diligence processes as they gain experience in how environmental performance affects real estate values and cash flows from real estate. They have been helped by the Asset Conservation Act, which codified into law a lender's right to maintain an "innocent landholder" defense and not be held liable under CERCLA for cleanup costs if the borrower takes possession only to protect its collateral. The industry now appears confident that its real estate due diligence processes protect it against future environmental risks.

4.3.3. Asset-Backed Commercial Credits

The second market for credit extension is project finance and other long-term, large asset-backed debt transactions. Asset-backed credits include infrastructure loans and loans for large industrial and service establishments, such as shopping malls, where the funded project is expected to generate enough revenue over its useful life to pay off the loan with interest. Traditionally, these loans are for large amounts (\$10 million or more) with maturities of 15 years or more.

International lenders have taken the lead in establishing the environmental due diligence processes applied to reviews of this type of credit extension. In 1997, International Finance Corporation (IFC), the World Bank's private sector arm, updated its Environmental Appraisal Checklist. The World Bank issued its much-anticipated official guidelines in November 1997, which replaced guidelines that had been in effect since 1988.¹⁰⁸

These two documents, combined with information released by European Bank for Reconstruction and Development¹⁰⁹ and the Asian Development Bank, are serving as templates for commercial banks and other institutions in revising and expanding their own due diligence protocols for project finance. The protocols consider how the borrower approaches environmental risk, what systems are in place for responding to environmental problems, and how environmental concerns are broadly integrated into the project's overall management. As a result, these new protocols go beyond real estate due diligence and broaden the concept of what is a material environmental concern in this type of transaction.

4.3.4. General Obligation Credits

General obligation credits are the only major type of credits that have no specific collateral. They are the functional equivalent of an unsecured credit extension, since such credits are paid off last in case of bankruptcy by the borrower.

The most common credit is an open credit line that the borrower can draw on as needed. Normally, the size of credit line is negotiated when it is first extended by the bank and then reviewed for increases or decreases on an annual basis by the banker with the

borrower. Given the lack of specific collateral, a credit officer's concerns are more similar to those of an investor than those of a lender with loan collateral.

For general commercial loans, the issue for lenders is the relationship between EP and the client's ability to generate cash flows to repay the loan. Leadership in this area is coming from the Bank of America and banks in Switzerland, the United Kingdom, Canada, and Japan. For example:

- At the UNEP meeting on Banking and the Environment in London of 1995, the Royal Bank of Canada (RBC) was the first institution to publicly speculate on the link between EP and creditworthiness. In 1996, RBC began to examine borrowers' environmental practices, programs, and systems in determining the viability of a loan, both in terms of whether it should be made and at what rate.¹¹⁰
- In January 1996, Sumitomo Bank Ltd. of Japan started to offer specially priced eco-loans as part of its SAFE (Sumitomo Advanced Finance for Ecology) program. This program enables small and medium-sized Japanese companies to make fixed asset investments that capture significant operating efficiencies related to the use of raw materials and energy.¹¹¹
- In mid-1997, the Swiss Bankers' Association formally proposed guidelines on how EP might be linked to general credit decisions.¹¹² It appears that many Swiss banks are following these guidelines.¹¹³
- In July 1997, the United Kingdom's NatWest Group launched a program for middle market firms with superior environmental practices, programs, and systems. Such firms receive an interest rate that is 100 basis points more favorable than a similar credit applicant.¹¹⁴

Given the infancy of these efforts, there is as yet no performance track record to evaluate.

In addition, numerous private institutions have indicated that they have begun, at least informally, to increase the level of environmental due diligence for clients within specific industry groups such as mining, petrochemicals, refining, and beachfront property development. This involves an assessment of how clients manage environmental risks beyond regulatory compliance, (e.g., how the client is managing the likelihood of increased windstorms, rising sea levels, and other natural disasters).

4.3.5. EP and Credit: Summary Observations

As a group, the organizations that extend credit—commercial banks, life insurance companies, and investment banks—have been involved with actively managing environmental risk since the late 1980s. Most institutions have an expert in-house staff focused primarily on evaluating real estate environmental risk and exposure. Many banks are also beginning to experiment with integrating environmental risk evaluation into their non-real estate credit decisions.

Both the life insurance and the commercial banking industries appear to have done a fairly complete job in two key areas:

- Integrating both static or steady-state environmental concerns (e.g., soil or groundwater contamination, asbestos, lead paint), and current regulatory concerns into their initial due diligence process for loans with real estate collateral
- Creating and integrating environmental covenants into their standard credit contract when real estate is involved

However, for other forms of credit extension, the industry is still working to integrate more complicated environmental concerns.

Some of the areas being exploring, or that appear to need to be explored, are:

- How do overall environmental risks—including some outside the borrower's control, such as regulatory policy and climate change—affect the credit decision-making process on large long-term credits?
- How does a borrower's current EP affect an asset's future value?
- How can monitoring a borrower's environmental activity and adherence to contractual covenants be done in a timely and cost-effective manner?
- Can a borrower's EP be evaluated and quantified with a degree of precision that would allow for variable pricing depending on EP?
- What public value (positive or negative) does being "green" have to a financial institution? Do customers care? Do stockholders care?

Based on information gathered by the authors in conversations with practitioners at individual institutions, presentations made at various conferences, seminars, and meetings, and in some of the papers identified in this report, many of these questions are being explored in some fashion by a handful of global institutions. At this time very little data is in the public domain.

4.4. UPSIDE AND DOWNSIDE FOCUS: INVESTMENT DECISIONS AND EP

4.4.1. Overview

Investors seek a rate of return composed of some combination of dividends, interest, and appreciation in the value of a financial instrument ("security"). *Based on the publicly available literature on the subject, investors appear to be focusing on two broad questions related to environmental performance:*¹¹⁵

- What does EP indicate about the investment candidate's operating efficiency, regulatory risk (primarily tied to Superfund in the US), and market awareness, and hence its earnings potential or loss and growth rate?
- What does EP indicate about how *other investors* may perceive the investment candidate's potential for earnings and growth, and hence the market value of its securities?

Section 4.4.2 provides an overview of the research that has been done to establish quantitative links between environmental performance and financial performance using various EPIs. Section 4.4.3 provides examples of commercially available environmental data packages and "screens" that provide information to those investors who want to include environmental considerations in their investment analysis. Section 4.4.4 describes the particular concern of each industry segment in relation to its potential interest in EP as an investment screen.

4.4.2. Research on the EP/FP Link

Thinking about the use of EP as an investment criterion has evolved over time. Environmental criteria were first used by those interested in socially responsible investing (SRI).¹¹⁶ SRI gained prominence in the 1980s as some investors chose not to invest in firms doing business under apartheid in South Africa. Similarly, other investors chose to take stands against firms selling tobacco, liquor, armaments, handguns, and electricity from nuclear power plants. Still other investors chose not to invest in firms known to be adversely affecting the environment in some way (e.g., major polluter, "clear cut" harvester of rain forest timber). For these investors, FP was a secondary criterion.

As industrial firms recognized the financial implications of improving their EP during the late 1980s and early 1990s, some members of the investment community started to recognize that EP conveys information about FP in some situations. Over the last few years, a great deal of research has been published that specifically looks at the correlation between the environmental actions of corporations and their profits, stock price, and/or other financial indicators (e.g., growth rates). This research has also considered the link between EP and indirect indicators of FP, such as public image and employee satisfaction. In general, this type of analysis is concentrated on the activities of US firms and industries.

Recent studies fall into three general types:

- Analysis of market response to a specific event, such as legislation or a toxic accident
- Assessment of performance of screened and unscreened portfolios over some specified time period
- Case studies and opinion research on what people think within the industry and information relevant to financial industry professionals in looking at industrial concerns as they pertain to environmental performance and its correlation to financial performance

The third type of research is the only one that uniquely reflects the active perspective of the FSI (as opposed to the passive workings of anonymous "market forces"). It therefore speaks more directly to this paper's objective of assessing, "... the extent to which the FSI currently recognizes the financial implications of its clients' EP" (Section 2.1).

Stock Market Response to Environmentally-Related Events:

- Blacconiere and Patten (1994) examined the impact of Union Carbide's leak at Bhopal on the stock valuation of other chemical firms. They found that this incident reflected poorly on the industry and resulted in a negative market reaction. That reaction was intensified for those firms that had made "extensive environmental disclosures" prior to this incident.¹¹⁷
- Blacconiere and Northcut (1995) analyzed the impact of the Superfund Amendments and Reauthorization Act (SARA) on the stock prices of chemical firms. Their earlier research corroborated their more recent findings: the impact of the legislation was negative, less negative for those that had made more extensive 10-K disclosures, and more negative for those where USEPA data revealed greater exposure to Superfund costs.¹¹⁸
- White (1996) explored the market's reaction to the Exxon Valdez incident and its impact on firms that had already established positive, neutral, or poor environmental reputations on the index of the Council on Economic Priorities (CEP). He found that it "paid to be green" in the aftermath of the Exxon Valdez incident. Firms with better environmental reputations experienced a positive impact from the spill, while the others were negatively affected.¹¹⁹

- Bosch and Lee (1996) looked at how the markets perceived the impact of USEPA investigations into a firm's activities, as reported by the *Wall Street Journal*, from 1962 to 1990. Firms lost value if they lost to USEPA in a dispute over compliance, or even if they had been targeted by USEPA for investigation.¹²⁰
- Hamilton (1993) examined how the market responded to TRI data and found that firms that had released comparable data before the first release of TRI data suffered the smallest drop in share price, while those that had previously released the least amount of data suffered the largest drop in share price.¹²¹

Portfolio Comparisons Using Various EPIs:

- Snyder and Collins (1993) performed a back test—that is, used historical performance to test a theory—on rates of returns for firms that passed an environmental screen and those that did not. The screen was composed of data on firm emissions (in pounds), compliance history, number of Superfund sites, and whether or not the firm was a nuclear power generator. The hypothesis was that the firms passing the screen would have higher costs and hence lower returns than those not passing the screen (e.g., those enjoying an environmental subsidy). Instead they found that S&P 500 firms that passed the environmental screen generated an increased rate of return (over 70 basis points per annum) over the specified 22-year period. Snyder and Collins noted two criteria for a successful screen: it should “leave a sufficiently large pool of stocks” from which to build a portfolio, and it should be based on objective, publicly available data.¹²²
- Clough (1997) considered a continuation and expansion of the work done by Snyder and Collins in 1993 by looking at additional years of data since the time of their study. The results of this study are similar to those of the earlier work.¹²³
- White (1995) used a firm's green reputation, including whether or not it was a CERES signatory, to assess returns over a four-year period. The publication of the Council of Economic Priorities (CEP), *Shopping for a Better World*, was also used as the basis for determining reputation. He found that “investors in a portfolio of firms enjoying above average reputations of corporate environmental responsibility earn risk-adjusted returns greater than either the overall market or portfolios composed of less environmentally-responsible firms.”¹²⁴

- Hart and Ahuja (1995) used data from the Investor Responsibility Research Center (IRRC) to look at the relationship between emissions reduction and firm performance for 127 firms from 1988 to 1989. The study tested hypotheses that reducing emissions in the first year would improve FP¹²⁵ in the following year or two, and that firms with higher emissions levels would be helped more than firms with lower levels. The hypotheses were generally confirmed.¹²⁶
- Cohen, Fenn and Naimon (1995), compared the returns from a portfolio of S&P 500 firms that were the environmental leaders in their industries with a portfolio of firms that were the laggards in the same industry. It found that the "low pollution" portfolio outperformed the high pollution portfolio. However, the study left open the issue of causation: are low pollution firms good performers because they are relatively more successful or are they more successful because they emit less pollution?¹²⁷
- Feldman, Soyka, and Ameer (1996) analyzed a sample of 327 of the Fortune 500 firms and found that the volatility of the stock was reduced after the introduction of environmental management; less risk implies higher valuation of a firm's earnings. As an environmental screen, it used the presence of a corporate EMS, operating performance measures (e.g., pollution amounts), and "environmental signaling," which included the amount and quality of information the corporation provides to the public.¹²⁸
- Guerard (1997) compared an unspecified environmental screen provided by the firm of KLD and found no statistical difference between the performance of a screened and unscreened fund.¹²⁹
- D'Antonio and Hutton (1997) compared the return on a portfolio of bonds from the Domini 400 index with the return on the Lehman Brothers Corporate bond index and found no penalty for selecting the socially responsible fund.¹³⁰
- Kessler and Gottsman (1998) compared the total financial returns of firms in the S&P 500 over a period of years to a series of subsets of the S&P 500 over the same years. EPIs were used as the basis for selecting the various subsets analyzed. Although the firms with apparently better environmental performance showed a slightly higher return than the overall return of the S&P 500, the difference was not statistically significant when risk factors associated with the less diversified subsets were included.¹³¹

Case Studies and Opinion Research:

- Ganzi and Dunn (1995), supported by UNEP and Salomon Inc., surveyed the banking industry to assess the extent of environmental activities at commercial and investment banks. Ninety institutions from 27 countries responded to survey questions about their environmental activities in three areas: internal bank management ("housekeeping" functions such as energy efficiency and recycling), credit extensions, and investment decisions. The study showed that although many institutions had established both internal environmental programs and real estate environmental due diligence programs, few programs were in place with respect to investments or other areas of credit beyond credit extensions with real estate collateral. This was one of the first studies of its kind.
- World Business Council on Sustainable Development (1997) published a volume of case studies detailing the environmental activities of leading multi-national corporations in Europe and North America. These case studies demonstrated positive financial performance resulting from proactive environmental activities. Improved financial performance was found to be associated with increased margins, increased market share, and/or new introductions of products marketed on the basis of environmental performance.
- Gentry and Fernandez (1997), with support from the UN and Salomon Inc., surveyed approximately 500 investment analysts and CFOs on how environmental performance influences Wall Street. Although the results showed a high interest level, they were based on a response rate of approximately 7 percent. The responding population did show a clear interest in environmental performance as a possible indicator of financial performance.
- Ganzi and Tanner (1997), with the support of the National Wildlife Federation, conducted a follow-up study to Ganzi 1994 work (above). The study contacted 160 institutions, with a 31 percent response rate. Compared to the 1994 study, there was a material change regarding how much focus banks were placing on environmental considerations. This change was most apparent in responses to questions about their current credit extension product lines (those not having real estate collateral), and their perspective on how the environmental performance of clients might affect investment decision-making in the near future (three years).

- **Business in the Environment (1997)**, in a follow-up to a virtually identical 1996 study, surveyed the FTSE 100 (the largest 100 publicly traded companies in the UK) to assess their views on environmental matters and their environmental activities. The study created an index of performance, including such factors as the use of internal environmental audits and environmental communication. The 1997 survey results showed moderate expansion of existing programs at most institutions, with some organizations making significant strides in the 12-month period between the two studies.

None of the above research, regardless of category, is without critics.¹³² In each of these studies, questions arise as a result of the different perspectives researchers bring to these subjects, as well as the data problems summarized above (Section 3.4.6).

4.4.3. Environmental Screens for Investment Decisions

While underwriters and lenders have a contractual means of obtaining information on a firm's environmental practices (e.g., through insurance or loan conditions) and, in theory, may have the ability to influence actual behavior, investors have no such leverage. They must rely on CERs and other information obtained directly from the firm, from publicly available data and the "value-added data" that is provided by vendors of "environmental screening tools."

The way the information is packaged for the investment community depends on its use. This section describes the product offerings of three groups that tailor generic information to meet the needs of the FSI.¹³³

- The Investor Responsibility Research Center (IRRC), a nonprofit group funded by several hundred institutional investors and corporations, offers the broadest database of all services, with data on nearly 1,500 companies. For the S&P 500, the IRRC presents all USEPA data, plus information collected via a proprietary survey completed by a company. For the remainder of the S&P 1500, only USEPA data is included. The standard company report is up to eight pages in length and presents a consolidated version of the information available from USEPA databases and the survey (see Exhibit I).
- Innovest International, based in Canada and established in 1992, offers an extensive presentation of publicly available information—as well as information obtained in discussions with company management—for approximately 100 companies. In contrast to the other products available today, Innovest draws conclusions and formulates opinions as to what the data could mean from a risk perspective (see Exhibit J).

- Environmental Information Services (EIS), established in 1995, performs extensive research and prepares purely factual reports of 50-100 pages on all aspects of the environmental activities and programs of Fortune 500 companies. This service covers all publicly available information (e.g., 10-K and other SEC filings) and all governmental databases. Unlike Innovest, this service does not draw conclusions nor make judgments about the link between the firms' EP and FP (see Exhibit K).

In addition to these "off the shelf products," ICF Kaiser and the Hartman Group, among others, now have standardized screening models that allow the creation of a customized portfolio.¹³⁴

4.4.4. Assessment by Segment

All eight segments of the FSI make investment decisions. The use of EPIs as investment criteria by each FSI segment is discussed below.

Investment Banks.¹³⁵ Investment banks serve as the primary financial advisors to corporate management; they play a smaller role in investing and lending their own capital. This segment advises and then manages the process for raising additional capital via a stock or bond offering. Separately, they perform extensive corporate research and analysis in order to help corporations manage their investment portfolios. Investment bank clients also include FSI firms such as life insurance companies and pension funds. In this advisory capacity, investment banking has the ability to broadly influence investment decisions.

Salomon/Smith Barney appears to be the only pure investment bank in the world with two separate units dedicated to environmental management and environmental investing. Based on the firm's environmental report, these units perform research and provide internal information to analysts on a variety of issues to help them "ask better questions" when conducting company assessments.¹³⁶ They also offer investors a social investment fund, the "First Generation Fund," and provide one of the nation's oldest social investment management programs.

Eaton Vance, through its subsidiary Winslow Management, has a separate operating group that specializes in investments that meet its financial criteria and are environmentally focused. After passing a financial screen, investment candidates then must either pass an environmental screen or are determined the "best-in-class" firm of an industry. In these cases, while it may prove environmentally problematic, the firm is needed to ensure portfolio diversification.¹³⁷

Mutual Funds.¹³⁸ It is difficult to generalize about mutual funds as a class. Each of the more than 8,000 funds¹³⁹ offered in the US has different target rates of return and guidelines for investment. These factors, in turn, influence the fund's investment time horizon, risk tolerance, and other overall decision-making criteria. There is limited

information on how mutual fund managers factor environmental considerations into their selection of investments for each type of fund offered, such as growth funds. The mutual fund industry has been a leader in providing investors "socially responsible" investment options, including those that focus on "green" firms.¹⁴⁰ These first generation funds have been of two general types: those that screen out egregious environmental offenders and those that invest in firms focused on specific market opportunities in environmental technologies or environmental businesses (e.g., Safety Kleen, a solvent recycler). A second generation of funds, now emerging, uses environmental screens as an indicator of FP. Several large European financial institutions have launched programs using a series of environmental measures or matrixes to identify firms with the best EP and FP. These firms include Storebrand, Norway's largest insurer, Bank Sarasin, a medium sized Swiss bank, the two largest Swiss Banks, Credit Suisse and Union Bank Switzerland (UBS), Service Performance Group a Swiss boutique investment manager, and SNS, a Dutch investment manager, and Winslow Management, a boutique US based investment advisor ^{141 142 143}.

Pension Funds.¹⁴⁴ Although some of the biggest funds in the US have been activist investors on a variety of issues, including the environment, pension funds as a group are constrained by governance rules that require prudence and sole focus on the bottom line. In general, they invest for the long-term, and tend to invest in the bonds and stocks of large publicly traded companies.

Pension funds are clearly interested in the downside risk associated with potential investments. For instance, in 1993, one US pension fund hired the European counterpart of IRRC to evaluate the environmental liability exposure associated with an investment in a Swiss chemical manufacturer.¹⁴⁵

Property and Casualty Insurance.¹⁴⁶ P&C insurance companies invest insurance premiums to ensure a stream of cash flow that may be used to pay potential future claims. Traditionally, the profitability of P&C companies has been driven by underwriting performance, not by the performance of its investment portfolio. Thus, investment strategies have tended to be long-term and very risk averse.

There are indications that this approach to managing P&C insurance profitability is changing. Many organizations, particularly in Europe, are now integrating investment management profitability into their overall models of product profitability. This, in turn, is changing the mix of investment options, as insurers begin to move away from their extremely conservative approach to investment management.¹⁴⁷

The literature scan for this report confirmed the results of prior primary research,¹⁴⁸ namely that there is little discussion regarding how the industry might integrate environmental considerations into its *investment* decision-making process.

Life Insurance.¹⁴⁹ Aside from long-term mortgages (discussed in Section 4.3.2), the life insurance segment relies on investments in long-term bonds with maturity dates that match the anticipated claims by policyholders, based on actuarial forecasts. Investment strategies in this industry segment may be vulnerable to EP because of the long time horizons that shape investment strategy. Many publicly traded life insurance companies have sister businesses or divisions in the P&C insurance business. These relationships would allow life insurance companies to draw on significant environmental risk expertise and data related to EP in making investment decisions.

Like their P&C counterparts, life insurers are also exploring ways to modify their investment strategies, but the literature search indicated no discussion of how the industry might factor EP of investment candidates into its evolving strategy.

Commercial Banks.¹⁵⁰ Many of the largest US commercial banks are pushing the boundaries of the regulatory limits set by the Glass-Steagall Act in expanding their investment banking and management activities. Banks such as Citicorp, Chase, Bank of America, NationsBank, and First Union are rapidly increasing the investment side of their business. Since commercial banks are still governed by stricter regulations than traditional investment banks, they are often involved in more long-term activities, and may maintain a more conservative approach to investment decisions. These two factors may lead commercial banks to a higher level of interest in integrating additional criteria, particularly EPIs, in their decision-making process, where such criteria are seen as material.

Venture Capital.¹⁵¹ With the exception of environmentally mandated startup costs,¹⁵² EP is not likely to be a material factor in most investments by mainstream venture capital funds or venture capital firms. Environmental factors are generally not seen as significant, given the high degree of other risks inherent in these types of transactions.¹⁵³

There is some explicit interest in investing in actual environmental technology firms, however. For instance, the Calvert Special Equities Program¹⁵⁴ includes innovative environmental technologies within its "socially responsible investing mandate." However, there appears to be little interest in the environmental operating performance of a firm.

Foundations/Endowments.¹⁵⁵ A few foundations are serving as leaders in integrating environmental factors as they relate to financial performance into their investment management and program-related investment (PRI) activity. As with mutual funds, the potential interest in, and or utility of, EPIs varies widely based on a foundation's philosophy and strategy.

4.4.5. EP and Investments: Summary Observations

Investment is the least developed area in integrating EPIs into financial decisions. In contrast to the industry-wide crises that beset underwriters (asbestos and CERCLA) and lenders (Maryland Bank & Trust and Fleet Factors/CERCLA), investment losses related to poor EP tend to be related to individual securities or specific sectors, such as the coal industry. Gains and losses from good or bad EP are hard to demonstrate except from a historical perspective. In addition, the absence of a physical asset contractually linking an investor and a firm allows investors to continually reassess their investment positions. The process of continual evaluation presents an opportunity for investors to gradually incorporate environmental concerns in their investment decision-making processes.

There are at least two mainstream industry-driven initiatives under way in the US that specifically address the role of EP in investment decisions. First, the New York Society of Securities Analysts has held periodic forums over the last few years aimed at introducing various concepts on environmental risks to securities analysts. Its upcoming series on "Uncovering Value: the Links Between Environmental Performance & Financial Performance" (see Exhibit L) is an example of its outreach and education program. The Aspen Institute, a private think tank based in Washington, D.C., convened a task force on environmental concerns in the spring of 1997. This initiative brought together members of the investment community with financial representatives of US corporations to discuss the environmental initiatives of these industrialists and to determine how information on these activities might be communicated to the investment community (see Exhibit M). Both of these initiatives—and others in the European Union (EU), UK, Germany, and Switzerland—point to the need for additional research geared towards translating EPIs into standard measures of FP. If this connection is convincingly made, the next step will be to communicate this knowledge to FSI decision-makers so they can decide how to use the available information, based on their specific needs and approaches to risk management.

4.5. CORE FINANCIAL DECISIONS: SUMMARY

Table 4 summarizes the basic financial criteria for each of the eight FSI segments and identifies the areas of greatest potential for integrating EP into the FP measurement process. It appears that the segments with the longest time horizons, such as pension funds and life insurance companies, would gain the most from using EPIs. These financiers would have the longest exposure to downside regulatory risk—and the opportunity for upside potential, as greater productivity is achieved with better EP. The P&C insurance industry would seem to benefit, at least on the downside, from ensuring that its investment strategies were consistent with its concern about global climate change. Investment bankers, in their role as the "institutional innovators" of the FSI, would seem to have an interest in pursuing EPIs as a potential competitive edge (to the extent that research and experience bears out the value of EPIs for certain sectors).

Table 4. Considerations of Each FSI Segment

Note: This table is meant to convey the broad differences that tend to exist among FSI segments. It does not necessarily apply to any particular firm.

Risk Tolerance	Targeted Rate of Return	Time Horizon	SUMMARY OF POTENTIAL INTEREST IN EPIs
1. Investment Banks <i>(as investor or lender for own account or on behalf of client)</i>			
Medium to High	High	Varies	Medium to High
2. Pension Funds			
Low	Moderate	Very Long	High*
3. Foundations/Endowments			
Moderate	Low to Moderate	Long	Medium
4. Mutual Funds			
Usually moderate or high but varies by fund	Usually moderate to high but varies by fund	Usually short to medium but varies by fund	Varies by Fund
5. Venture Capital**			
High	High	Medium	Low
6. Commercial Banks <i>(in its credit extension or investment decisions)</i>			
Moderate	Moderate	Medium to long	Medium***
7. Life Insurance <i>(as an investor or lender)</i>			
Low, but changing	Low, but changing	Very Long	High****
8. Property & Casualty Insurance <i>(first row as an investor and second row as an underwriter)</i>			
Low to Moderate, but changing	Low, but changing	Medium to Long	Medium to High****
Moderate	Moderate	Short to Medium	High

* Depending on governance requirements and guidelines

** Environmental factors may be extremely significant for some startup firms, and insignificant for others

*** Expanded interest tied almost exclusively to asset-backed debt

**** Overall approach to investment management is currently undergoing change

5. SUMMARY OF KEY FINDINGS AND POTENTIAL AREAS FOR STUDY

5.1. SUMMARY OF KEY FINDINGS

FINDING 1. There appears to be no clear consensus on how to define EP at the firm or plant level, nor on how to report such performance to the general public or to the FSI.

Although a great deal of effort has been put into EP activities and the establishment of EPIs by corporations and others, no agreement yet exists at the national or international level as to what should be reported or how it should be reported. A wide range of current approaches is presented in this report and new approaches are still being explored. It is uncertain when, or if, a clear consensus will be reached by the various parties involved in the discussions.

FINDING 2. It appears that EP has the potential to affect a firm's rate of return, cash flows, credit worthiness, the price of its publicly traded securities, and/or likelihood of filing a property or casualty insurance claim. Although this potential exists, there is a fair amount of disagreement as to the materiality of this impact within the FSI.

Each segment of the FSI appears to have its own perspective on whether EP is material or not. Materiality for the FSI is based on the following questions:

- What is the value of enhanced EP (i.e., does it result in a 1 percent or 10 percent improvement in FP)?
- Is the data available for most clients, at least within an industry or geographic region?
- How hard is it to gather EP information?
- How hard is it to convert EPIs into financial information that can be analyzed by an underwriter, credit officer, or investor?

FINDING 3. An unresolved issue for integrating EP into FP is how to determine for a particular industry which of the many aspects of EP are relevant to firm-level FP.

The quality of a firm's EP lies "in the eye of the beholder." Firms that have elaborate environmental management systems may still be significant generators of emissions, while firms without such systems may actively be reducing their environmental impacts. Two firms with the same level of emissions may be on different trend lines: one reducing its emissions from much higher levels in the past, and one increasing emissions as its business grows. Firms may be improving on one indicator (e.g., toxic releases to air) while regressing on another (e.g., nutrient releases to water). It should be noted that the EPs that are relevant to a financier's evaluation may or may not be the same as those that are relevant to the government, or to environmental or community groups.

FINDING 4. The FSI's perspective is colored by its past experience with environmental risks, including lender liability for lenders, asbestos and CERCLA (Superfund) claims for underwriters, and "social investing" for investors.

In general, the FSI has had three types of exposure to environmental issues:

- "Housekeeping," where the industry looked to its own environmental impacts such as energy use and wastepaper generation
- "Socially responsible investing," where investment managers responded to customer requests for "green" investment choices, possibly without primary regard for financial returns
- "Crisis management," where the industry dealt with insurance claims for CERCLA liability and lender liability for remediating contaminated real estate collateral

FINDING 5. Improving EP can reduce the "downside" risk or increase the "upside" potential for the client, and in turn the financier. EP can potentially reduce the risk of loss (the downside risk) for insurers, lenders, and investors, or EP can help produce new products or open new markets, thus enhancing a client's potential for earnings and growth (its upside potential) for investors.

Enhancing EP as it relates to financial performance means being able to change processes so that more units are produced with fewer natural resources, and/or establishing new processes or products that provide similar or better benefits with less environmental impact. Thus, the financial benefits are likely to come in the form of reduced costs and risk of liability. Neglecting EP may reduce the productivity of the firm, increase the risk associated with its production activities, and degrade its public image.

FINDING 6. Insurance underwriters and, to a lesser extent, commercial lenders are furthest along in integrating environmental factors into their decision-making processes. Both underwriting and credit transactions generally involve a physical asset. Environmental performance impacts this underlying asset, giving both underwriters and lenders a direct material interest in their corporate clients' EP.

Some lenders are beginning to broaden their perspectives. EP may be used as a credit risk indicator and is being factored into some decisions about the pricing and availability of credit, particularly for asset-backed lending. Lenders and underwriters have the most obvious material interest in the EP of their clients due to their contractual relationships.

Lenders are concerned about performance – the stability/sufficiency of cash flows – which might be adversely affected by regulatory actions, such as USEPA fines or mandated shutdowns for non-compliance. They are also concerned about the quality of collateral, which may be devalued either by contamination or regulatory changes that negatively impact industrial activities (e.g., carbon tax on energy production).

FINDING 7. In contrast to underwriters and credit officers, investors are still in the early stages of understanding the potential impacts of a firm's environmental performance on its financial performance. This difference is due, in part, to the limited availability of useful data.

Investors face the classic "chicken or egg" dilemma regarding the availability of data. Without data it is difficult to assess whether, or to what extent, EP is a material factor in investment decisions. Yet, without a finding of "materiality," it is difficult to justify the development of consistent, reliable, timely data sources for an appropriate range of EPs. An iterative six-step process will be required to resolve this dilemma.

- At a minimum, corporations must perceive EP as a source of opportunities for cost and risk reduction. Beyond that, they may also see EP as a source of competitive advantage and as an opportunity for increased market share, new markets, and/or new products.
- Corporations generate data on EP to meet the needs of identified populations, including internal managers (e.g., environmental audits), government regulators (e.g., Toxics Release Inventory), and stakeholders (CERs). Institutional investors – and if appropriate, individual investors – would need to make it clear they want EP data in order to induce the corporation to expend the time and money to produce the hard data.
- Business groups, governmental agencies, public interest groups, and the FSI would need to agree to a standardization of public reporting of corporate

environmental management and performance (in terms of breadth of EPIs reported and consistency of EPIs across industries) to facilitate use by both internal and external parties. Standardization involves reaching some consensus on a methodology for defining and measuring EP.

- Researchers in academia, government, and the private sector are attempting to quantify the link between EP and FP, both in terms of downside risk of poor firm EP and upside potential for leaders in sustainable business practices.
- The information on EP, once gathered, would need to be effectively communicated to investment analysts, and the FSI at large, to be integrated into the actual investment decision-making process.
- Given research findings (assuming results are consistent with the research done to date, identified in Section 4.4.2), financial industry analysts would then be able to translate myriad EPIs into workable financial tools for use by financial industry decision makers.

Progress is being made on each of these fronts at varying rates.

Finding 8. Assessing the materiality of a firm's EP is especially difficult for investors, due to the fact that no material asset is involved; rather, the investor's stake is a financial instrument. In addition, investors must evaluate both downside risk and upside potential.

This review of the literature suggests that EP is potentially a material concern for investors that invest for the longer-term, are focused on economic fundamentals of steady growth and return, and are relatively more risk-averse. Thus incorporating EP into *investment* decisions—as opposed to lending or underwriting decisions—would, theoretically, appear to be of different value to different industry segments.

- It may be most important to pension funds, life insurance companies, and P&C insurance companies, because of their size, long-term investing horizon, aversion to risk, and interest in solid fundamentals of a firm's long-term earnings potential performance.

- It may be important for investment banks, to the extent that there is client interest. However, investment bankers, who have traditionally held the role of institutional innovators in the FSI investor community, might have an interest in quantifying the relationship between EP and FP as a possible means of gaining a competitive advantage.
- It seems least important for commercial banks and venture capitalists, which invest for short- to medium-term results.
- Given the diverse objectives of mutual funds, it is difficult to generalize about the role of EP for this type of financial investment vehicle.
- It may be important to foundations and endowments, but as this segment controls a relatively small amount of capital, its interest is unlikely to be a driver for mainstream change.

FINDING 9. The FSI is beginning to realize that industry's environmental performance in the aggregate can have spillover effects, which in turn can negatively affect the financial performance of its corporate clients—even those who adhere to sound environmental management practices.

The indirect effect arises where the EP of one group of industrial clients contributes to the risk of property damage or operating losses that may be experienced by another group of industrial clients and that reduces collateral or security value or results in higher insurance claims.¹⁵⁶

- For property and casualty insurance underwriters, this indirect impact may result in claims for losses.
- For credit institutions, this indirect impact may result in uninsured damage to collateral; loss of cash flows due to production interruptions; a reduction in collateral value due to a decrease in real estate value; and/or production technologies that are rendered obsolete by policy changes to address these problems.
- For investors, this impact may increase the perceived risk of an income stream, thus reducing the value of the securities.

5.2. AREAS FOR POTENTIAL RESEARCH

There appear to be many unanswered questions about how financiers can and will use EP and EPIs in their core financial decision-making processes. At present, these questions relate to data availability, data usability, and materiality of environmental considerations. More knowledge of the thoughts within the FSI on these questions would help focus the efforts of industry in the measuring and reporting of EP and EPIs.

To determine priorities for further research, each of the eight FSI segments included in this report was evaluated according to the overall relevance of environmental factors in its day-to-day operations; the types of financial activities in which it is engaged; the magnitude of its capitalization; and the extent to which its practitioners already assess clients' EP (in part) as a function of FP.

Based on this analysis, it appears that the greatest untapped opportunity for identifying effective ways for integrating EP into assessments of FP lies in the area of investment decisions. The specific FSI segments engaging in investment activities are:

- Investment Banks
- Property and Casualty Insurance Companies
- Pension Funds
- Life Insurance Companies

A secondary priority for additional research would be asset-backed lending by commercial banks. While environmental performance is occasionally integrated into such lending decisions, especially when a development bank (e.g., World Bank) is involved, a clear standard for this segment has yet to emerge.

Although other areas could be considered, it appears that work with the FSI segments identified above would most likely result in the greatest impact for the effort expended.

NOTES

¹ Key Terms. *Underwriter*. Throughout this report, the term underwriter refers to the person who assesses risk of loss *related to the issuance of insurance, not one involved with the new securities offerings*. *Securities*: Vehicles for investment including common stock, preferred stock, short-term, and long-term corporate debt.

² For an excellent current perspective on the subject from a European Union perspective, see: The Role of Financial Institutions in Achieving Sustainable Development, Report by the European Commission, Delphi International and Ecological GmbH, Brussels, Belgium, November 1997. For a United Kingdom investor's perspective, see: The Index of Corporate Environmental Engagement, the Survey of the FTSE 100 Companies, Business in the Environment, London, England, January 1998.

³ The decision to limit the scope of this report to these eight segments was based on: (i) earlier literature searches done by Environment and Finance Enterprise (E&FE) in 1994, 1996, and 1997; (ii) primary research conducted in 1994, 1996 and 1997 by E&FE with financial support from the UNEP, Salomon Inc., USEPA, and the National Wildlife Federation; (iii) presentations made by various financial institutions at the UNEP *Banking and the Environment* conferences (in which E&FE played a material role in selecting the agenda and speakers) held in 1994 (Geneva), 1995 (London), and 1997 (New York), and (iv) personal conversations held by E&FE representatives with various individuals and association representatives as part of the scoping process for this effort.

⁴ Linking EP and FP is similar in concept to the well-accepted practice of quantitatively, or qualitatively, relating traditional operating performance measures (e.g., raw materials used, inventory on hand, sales per employee, or labor turnover) to financial performance. Historically, production inputs have been viewed as raw materials, labor, and capital. Concern about the environment has broadened the original concept, in some schools of thought, to include the full range of ways in which a firm uses environmental assets (e.g., clean air, fresh water, soil, etc.) as inputs into its production activities or as a dump for waste products (e.g., releases to air, water, and soil). The "cost" of using these environmental assets may be zero, may be set directly by markets, or may be set indirectly through regulation or public concern. *Unlike* the supply of labor (unless zero unemployment is reached and maintained) and capital, there are physical limits to the aggregate level of utilization that can be sustained over time (e.g., the capacity of a river to assimilate waste products or the sustainable yield of a fishery). To keep the impacts of a growing population and a growing economy within these limits implies that the cost of utilization may be expected to increase, thereby encouraging reduced use of these environmental assets. These reductions would come about through changes in technology or changes in preferences. Firms may be negatively affected by this process, (e.g., through higher costs of regulatory compliance) or positively affected (e.g., through lower production costs or the creation of new market opportunities). This report considers how a corporate client's response (reactive, compliant, or

proactive) to these forces may be factored into financial decisions by the FSI.

⁵ A generic set of indicators provides the basis for developing industry norms. Thus, a financier may use the same measure for two different industries, but may evaluate firm performance in relation to its industry norm.

⁶ The focus of this report is on how measures of a firm's *current* and future EP might be factored into financial decisions. The FSI has already integrated information on past EP, notably SEC disclosures of environmental liabilities under CERCLA and similar state statutes, into its decisions.

⁷ Given a range of standard financial performance indicators—return on investment (ROI), return on assets (ROA), growth rate, price-to-earnings (P/E) ratio—each financier will consider which is most relevant to the financial decision at hand (e.g., short-term investment, long-term credit extension).

⁸ For an overview on the various EPIs, please see: White, Allen and Diana Zinkl, "Green Metrics: A Status Report on Standardized Corporate Environmental Reporting," Working Paper prepared for CERES 1997 Annual Conference, September 1997.

⁹ Tibor, Tom and Ira Feldman, ISO 14000 - A Guide to the New Environmental Management Standards, Richard D. Irwin, New York, 1996. This is one of numerous guides available to potential participants in the ISO 14000 process.

¹⁰ Draft ISO 14031: Evaluation of Environmental Performance has been created in a group setting. The several hundred group members include environmental technical experts as well as representatives from large multinational corporations, governments, academia, and non-governmental organizations. The attached Exhibit H is excerpted from the draft version released late in 1997 after the group's most recent meeting in Brazil.

¹¹ See Engaging Stakeholders: The Benchmark Survey, UNEP, 1996.

¹² Blum, Georges (Swiss Bank Corporation), Blumberg, Jerald (DuPont), and Age Korsvold (Storebrand), EP and Shareholder Value, World Business Council for Sustainable Development, 1997.

¹³ Statement of Principles, Coalition for Environmental Sustainable Economies.

¹⁴ For a way of analyzing industry differences that goes beyond the Standard Industrial Classification groupings, see Rondinelli, Dennis A. and Gyula Vastag, "International Environmental Standards and Corporate Policies: An Integrative Framework," California Management Review, September 1996, 39(1): 106.

¹⁵ Lober, Douglas J., "Current Trends in Corporate Reporting," Corporate Environmental Strategy, Winter 1997, 4(2): 15-24.

¹⁶ Liability for land contamination arises under CERCLA, RCRA (Corrective Action), and under parallel state statutes. The material impact of CERCLA liability on the underwriters and lenders is described in Part Four. For discussions of the indirect impact of CERCLA liability on stock performance, see Cormier, Denis and Michael Magnan, "Investors' Assessment of Implicit Environmental Liabilities: An Empirical Investigation," Journal of Accounting & Public Policy, Summer 1997, 16(2): 215-241. Muoghalu, Michael, and John E. Rogers, "The Economic Impact of Superfund's Litigation on the Value of the Firm: An Empirical Analysis," Journal of Economics & Finance, Fall 1992, 16(3): 73-87.

¹⁷ Liability for accidental releases to air and water would arise under a variety of statutes.

¹⁸ Winans, Christopher, "Setting The Standard; Effects Of International Organization For Standardization's ISO 14001 On Pollution Insurers," Best's Review P&C, April 1997, 97(12): 32.

¹⁹ In addition to the sanctions applied by the regulatory body, there is the secondary effect related to market valuation. See Section 4.4.2 for a discussion of research on the effects of regulations on stock performance.

²⁰ Examples include the consumer boycott of Exxon after the Exxon Valdez accident, and consumer boycott of tuna that is not listed as "Dolphin Safe."

²¹ See Section 4.4.2 for a discussion of studies relating environmental performance and stock market valuation.

²² Hoffman, Andrew J., "A Strategic Response To Investor Activism," Sloan Management Review, January 1996, 37(2): 51.

²³ Wolf, Sidney, "Fear and Loathing about the Public Right to Know: The Surprising Success of the Emergency Planning and Community Right-to-Know Act," Journal of Land Use and Environmental Law, 11(2): 217-324, spring 1996. See pp. 307-312 about industry's response to release of TRI information.

²⁴ The initial article was a one-page viewpoint piece in Scientific American, in April 1991. This was followed by: Porter, Michael and C. van der Linde, "Green and Competitive: Ending the Stalemate," Harvard Business Review, September/October 1995.

²⁵ For a discussion of this evolution in corporate management thinking, see Zetlin, Minda, "The Greening Of Corporate America," Management Review, June 1990, Vol. 79: No. 6. Schmidheiny, Stephan, Changing Course: A Global Business Perspective on Development and The Environment, The Business Council for Sustainable Development. Cambridge and London: MIT Press, 1992. Hart, Stuart L., "Beyond Greening: Strategies for a Sustainable World," Harvard Business Review, January/February 1997.

²⁶ Since then, this organization has issued two reports that make the link between EP and FP explicit: Financing Change: The Financial Community Eco-Efficiency and Sustainable

Development (1996) and EP and Shareholder Value (1997). See also Skillius, Asa, "Assessment of Corporate EP for

the Finance Sector," paper presented at Conference of Nordic Business Environmental Management Network, Finland, June 5, 1997.

²⁷ Anecdotal examples of productivity improvements and marketing opportunities associated with a proactive environmental stance were found throughout the literature review; please see the bibliography for additional references. In addition, EPA and various states maintain clearinghouses that provide information on pollution prevention and energy saving opportunities with short paybacks.

²⁸ "Too Little Waste," Wall Street Journal, August 5, 1994, speaks about the emerging problem of "too little" hazardous waste to support existing management facilities because "customers, primarily chemical and manufacturing companies, have had surprising success in reacting to tougher regulations and cutting the amounts of waste they generate and send to dumps."

²⁹ "See Beyond ISO 14000: Lucent Technologies Blazes Trail to Regulatory Relief," Environmental Management Today, March/April 1996, pp. 1-16. Lucent is a participant in EPA's Project XL.

³⁰ See Blum et. al., op. cit. for a case example on Dow Chemical, which realized an improvement in yield and a reduction in waste disposal costs.

³¹ See note above.

³² For instance, in a survey of chemical carriers and manufacturers, respondents rated environmental, health, and safety issues as 9.1, with 10 being the most important. The article notes that environmental performance is a factor when manufacturers select carriers. "Carriers and Shippers Find Common Ground," Chemical Week, September 27, 1995, Transportation Supplement, pp. 6.

³³ See Blum et. al., op. cit. for a case example of the Kvaerner engineering firm regarding price premiums (pp. 48-49).

³⁴ See, for example: Magretta, Joan, "Growth Through Global Sustainability: An Interview with Monsanto's CEO, Robert B Shapiro," Harvard Business Review, January-February 1997, pp. 79-88. See also Blum et. al., op. cit. for a case example from DuPont's agricultural products division (pp. 40-41).

³⁵ For instance, in a 1996 survey of firms participating in ISO 9000, almost 40 percent of firms with sales greater than \$1 billion cited perceived internal management benefits as the most important reason for considering participation with the related environmental management standard ISO 14000 (at a time when the standard was not yet final). The ISO 9000 Survey, 1996,

Irwin Professional Publishing and Dun & Bradstreet Information Services, January 1996, pp. 11.

³⁶ A wider market is the end result when the firm is not "screened out" by a group of investors as more investors use environmental screens to reduce downside risk.

³⁷ See UN Engaging Stakeholders, pp. 74 for a discussion of the tension between the "Anglo Saxon Model" which focuses on management indicators and the "Rhine Model" which focuses on input/output measures of EP.

³⁸ As the literature reviewed revealed multiple competing approaches to organizing EPIs, this discussion adopts a middle ground of four categories. This categorization scheme is intended to simplify and structure this discussion; it does not connote an alternative framework. These four categories are also sufficiently generic to any basic business strategy so that the FSI may see parallels between EPIs and more familiar indicators of financial performance.

³⁹ Engaging Stakeholders: The Benchmark Survey, UNEP, 1996. See Appendix 2 for a listing of the range of EPIs on which it evaluates CERs.

⁴⁰ Ditz, Daryl, and Janet Ranganathan, Measuring Up: Toward a Common Framework for Tracking Corporate Environmental Performance, World Resources Institute, July 1997.

⁴¹ White, Allen and Diana Zinkl, "Green Metrics: A Status Report on Standardized Corporate Environmental Reporting," Working Paper prepared for CERES 1997 Annual Conference, September 1997.

⁴²For instance, an eco-tourist resort or a solvent recycling firm.

⁴³ For instance, Patagonia's decision to use organically grown cotton (rather than cotton grown by traditional methods which rely heavily on pesticides) in its clothing is consistent with a business strategy built on the existence of a high quality outdoor environment.

⁴⁴ For a discussion of the regulation repercussions of the Bhopal incident, see: Wolf, Sidney, "Fear and Loathing about the Public Right to Know: The Surprising Success of the Emergency Planning and Community Right-to-Know Act," Journal of Land Use and Environmental Law, Vol. 11(2): 217-324, Spring 1996.

⁴⁵ Avila, Joseph A. and Bradley W. Whitehead, "What Is Environmental Strategy? Interview with Dow Chemical Chairman Frank P. Popoff and David T. Buzzelli," McKinsey Quarterly, September 22, 1993, No.4, pp. 53.

⁴⁶ For instance, it is a complex task to compare two multinational conglomerates in terms of their operating practices and performance. It may be simpler, and more informative, to compare the two on the basis of strategy and generic management practices. Feldman, et. al. include this concept as part of their assessment of EP and stock performance. See Feldman, Stanley J., Peter A. Soyka and Paul G. Ameer, "Does Improving a Firm's Environmental Management System and EP

Result in a Higher Stock Price," Journal of Investing, Winter 1997, 6(4): 87.

⁴⁷ Based on the various research efforts performed by representatives of E&FE over the last four years, as noted in endnote 2.

⁴⁸ Balikov, Henry R., "The Value Of 'EHS Auditing' In the United States: Making Sense Out Of The Current Chaos," Environmental Quality Management, 6(1): 23-26. Buxton, Brian and Eric Nielson, "How to be Lean, Mean and Green: Environmental Auditing," Financial Executive, July 1995, 11(4): 29.

⁴⁹ McLaughlin, Susan, Valuing Potential Environmental Liabilities for Managerial Decision Making: A Review of Available Techniques, EPA 742-R-96-003, December 1996. King, Alfred M., "EPA Identifies 37 Environmental Impact Tools," Management Accounting, March 1997, pp. 67. Bailey, Paul E. and Peter A. Soyka, "Making Sense of Environmental Accounting," Total Quality Environmental Management, Spring 1996, 5(3):1-15. Demery, Paul, "Is It Time To Tackle Environmental Issues?" Practical Accountant, November 1996, 29(11):76-80. Epstein, Marc J., "Improving Environmental Management with Full Environmental Cost Accounting," Environmental Quality Management, Autumn 1996, 6(1):11-22. Parker, Jeffrey N., "The Importance of Environmental Cost Accounting," Management Accounting (USA), December 1996, 78(6): 63. Ranganathan, Janet and Daryl Ditz, "Environmental Accounting: A Tool For Better Management," Management Accounting, London, February 1996, 74(2): 38-40.

⁵⁰ Lober, Douglas J., "Current Trends in Corporate Reporting," Corporate Environmental Strategy, Winter 1997, 4(2): 15-24. Also Lober, Douglas J., David Bynum, Elizabeth Campbell and Mary Jacques, "The 100 Plus Corporate Environmental Report Study: A Survey of an Evolving Environmental Management Tool," Business Strategy and the Environment, 1997. KPMG, International Survey of Environmental Reports, March 1997.

⁵¹ For an overview of the development of these standards, see: Uzumeri, Mustafa V., "ISO 9000 and other Mete-standards: Principles for Management Practice?" Academy of Management Executive, February 1997.

⁵² Toxics Release Reporting was mandated for manufacturing firms under Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986. 1987 was the first year of reporting. Under the Hazardous and Solid Waste Amendments Act of 1984, EPA began to issue its "land-ban" rules (banning the land disposal of particular hazardous wastes altogether, and/or mandating treatment prior to land disposal for others) which substantially raised waste disposal costs. Finally, in 1990, Congress amended the Clean Air Act with more stringent air pollution control regulations, including the regulation of hazardous air pollutants.

⁵³ See endnote 25 for additional sources.

⁵⁴ Alexander, Forsyth, "ISO 14001: What Does it Mean for IE's," IIE Solutions, 28(1): 14-18. January 1996.

⁵⁵ Mullin, Rick and Kara Sissell, "Merging Business & Environment," Chemical Week, October 9, 1996, 158(38): 52-53.

⁵⁶ Industries vary in their interest and adoption of EMS depending on the nature of their interactions with the environment. As ISO 14000 registrations are just beginning, it is too early to establish clear patterns of industry interest. However, many observers expect that the same forces that have encouraged firms to apply for ISO 9000 registration will also drive ISO 14000 registration. In the same 1996 survey mentioned in endnote 35, 31 percent of respondents indicated that they may pursue ISO 14000 certifications. Survey respondents generally fell into six industry groups: electronics (SIC 3600), industrial equipment (SIC 3500), chemicals (SIC 2800), fabricated metals (SIC 3400), instrumentation (SIC 38000) and wholesale trade (SIC 5000). Trade press reports indicate that initial certifications range from electric utilities to resort hotels. The bibliography also lists industries that are reporting ISO registration.

⁵⁷Winans, op. cit.

⁵⁸ Sleeman, Stuart and Karen Coyne, "ISO 14000: A Primer for Industry Concerned with Environment," Pipeline & Gas Journal, May 1996, 223(5): 25.

⁵⁹The ISO 9000 Survey, op. cit.

⁶⁰For example: "IBM Aims to Cut Cost Risk by Demanding Strict Standards; Japanese Unit Chosen to Enforce Rules on Environment," The Nikkei Weekly, May 26, 1997, pp. 24. See also: The ISO 9000 Survey, op. cit.

⁶¹ Williams, Frances, Eco-Label Standards attacked by WWF, Financial Times (London), September 13, 1996, pp. 4.

⁶² Blumberg, Jerald (DuPont), Georges Blum (Swiss Bank Corporation) and Age Korsvold (Storebrand), EP and Shareholder Value, World Business Council for Sustainable Development, 1997.

⁶³ For example, see: Brown-Humes, Christopher, "Certificates for Swedish Forests," Financial Times (London), February 28, 1996, pp. 14. Urry, Maggie, "Sustainable Forests: Overcoming Growing Pains," Financial Times (London), December 08, 1997, pp. 3.

⁶⁴ Exceptions include EPA mileage standards for new automobiles and energy efficiency labels on appliances.

⁶⁵ The Envirofacts Warehouse address is http://www.epa.gov/enviro/index_java.html.

⁶⁶ Cushman Jr., John H. "EPA is pressing plan to publicize pollution data: industries fight move," The New York Times, August 12, 1997, pp. 1.

⁶⁷"Envirofacts Online: The EPA's Web-Enabled Data Warehouse Gives the Public the Inside

Line," Oracle Magazine, September/October 1997, Volume 11, No. 5, pp. 66-67.

⁶⁸ The potential for global climate change caused by combustion of fossil fuels is leading to greater interest in the systematic disclosure of energy use and carbon dioxide emissions. National Provident Institution (UK), an insurance company and investment advisor, and Imperial College are preparing to offer clients access to a new risk indicator: the "Global Warming Indicator." Announced in December 1997, the indicator is now being circulated to accountants, financiers, and companies for review and comment, prior to being put into use. This risk index focuses on an industry's energy use. Unlike EP screens that link EP to business performance, it is intended to show how actions to address global climate change may expose investors to regulatory risk and potential technological obsolescence.

⁶⁹ See UN, Engaging Stakeholders, op. cit., WRI, Measuring Up, op. cit. and White and Zinkl, Green Metrics.

⁷⁰ It is important to note that the USEPA has regulatory jurisdiction over only some aspects of a firm's environmental performance, primarily those involving emissions to air, water, and land from production activities and from certain products (e.g., autos, small motors). Other federal, state, and local authorities have responsibility for other aspects of environmental performance (e.g., the Department of Agriculture and its farmland erosion prevention programs; state programs to allocate water supply). Still other aspects are regulated by market forces (e.g., some water supplies) or quasi-markets (e.g., tradable permits). In addition, USEPA's regulatory reach varies by industry.

⁷¹ Skrzycki, Cindy, "Industry Groups Point Out Errors in EPA's Online Scorecard," The Washington Post, January 2, 1998, pp. C13.

⁷² Investor Responsibility Research Center, Environmental Reporting and Third Party Statements, prepared for the Global Environmental Management Initiative, March 1996. The GEMI/IRRC report, cited above, made three recommendations for improvements. CERs should include "... [a] statement that all major risks were included in the report, recommendations for future performance improvement areas, and a prioritization of outstanding environmental challenges facing the company."

⁷³ Lober, op cit., pp. 23.

⁷⁴ See the KPMG study, op. cit. for a list of initiatives. A March 1997 meeting in London produced a report titled "Signals of Change" which noted that "surprisingly little progress has been made in the development of sustainability indicators for business or government, or any other sector of activity." Unsigned article, "Unsustainable Lack of Standards," Financial Times (London), March 5, 1997, pp. 21.

⁷⁵ White and Zinkl, op. cit.

⁷⁶ White, Allen and Diana Zinkl, "Green Metrics: A Status Report on Standardized

Corporate Environmental Reporting," Working Paper prepared for CERES 1997 Annual conference, September 1997.

⁷⁷ For a discussion of research issues, see Griffin, Jennifer, and Mahon, John F., "The Corporate Social Performance and Corporate Financial Performance Debate: Twenty-Five Years of Incomparable Research," *Business and Society*, March 1997.

⁷⁸ A recent article in *Chemical Week* highlighted the problem of obtaining comparable data from industry reports for a single industry. Monsanto's top environmental official was quoted as saying that it would be difficult to develop the kind of ratios desired by environmentalists and others because of the diverse nature of the chemicals business; see Staff, "Sustainability Concerns Drive Demand for Data," *Chemical Week*, August 13, 1997.

⁷⁹ Personal sources indicate that this problem was a major source of discussion at meetings of New York Securities Analysts (February 1998), the United Nations Environment Program (May 1997), and New York Investment Analysts (September 1996). For more general discussions of the limitations of TRI data, see: Griffith, J.J., "The Toxics Release Inventory: Limitations and Implications," Proceeding from the Sixth International Association for Business and Society, K. Rehbein (ed.), 1996, pp. 324-9. Logsdon, J.M. "The Toxics Release Inventory as a Data Source for Business and Society, Fifth International Association for Business and Society, D. Collins, ed., 1995, pp. 648-53.

⁸⁰ Ganzi, John, Frances Seymour, and Sandy Buffet. "Leverage for the Environment: Strategic Mapping of the Private Financial Services Industry," March 1998.

⁸¹ These findings and the decision to limit the scope of this report to these eight segments was based on: (i) earlier literature searches done by Environment and Finance Enterprise (E&FE) in 1994, 1996, and 1997; (ii) primary research conducted in 1994, 1996, and 1997 by E&FE with financial support from the UNEP, Salomon Inc., USEPA, and the National Wildlife Federation; (iii) presentations made by various financial institutions at the UNEP *Banking and the Environment* conferences (in which E&FE played a material role in selecting the agenda and speakers) held in 1994 (Geneva), 1995 (London), and 1997 (New York); and (iv) personal conversations held by E&FE representatives with various individuals and association representatives as part of the scoping process for this effort.

⁸² Stakeholders generally include shareholders, creditors, suppliers, the firm's employees, and the communities in which the firm operates.

⁸³ The property and casualty (P&C) insurance industry is in two businesses: "underwriting" risk and managing investments. In its underwriting function, the industry examines the frequency and severity of risks of damage to personal or commercial physical assets ("property") or injury to persons ("casualty"), and then places a value on insuring against, or "underwriting," these risks. The P&C industry has three main components: primary issuers, "excess of" insurers (from whom the firm would buy insurance to cover losses over the limits covered on the primary policy), and reinsurers (from whom insurance companies buy insurance to cover aggregate losses above some

limit on a pool of policies). The latter two components tend to spread risk globally. While the P&C industry is the dominant force in this financial area, commercial banks have expressed an interest in underwriting this type of risk.

⁸⁴ This follows the discussion found in Ganzi, John T. and Brian T. Neubert, Research on the Financial Impact of Environmental Events and Issues on the Property and Casualty Insurance Industry, World Resources Institute, under contract to EPA, Fall 1996.

⁸⁵ In addition to CERCLA-related claims, the other material "environmental" risks facing the insurance industry are claims for worker injuries due to releases of asbestos at plants where asbestos was used in the manufacturing process.

⁸⁶ Tarnoff, Stephen, "Manville Bankruptcy Boosts Costs for Other Defendants," Business Insurance, March 19, 1984.

⁸⁷ This move addressed the financiers' need for information on these exposures. See: Kazanski, Paul, "Recognition, Measurement, and Disclosure of Environmental Liabilities," Casualty Actuarial Society Forum, Summer 1994, pp. 387.

⁸⁸ For discussion of the problems of asbestos and environmental (A&E) exposure, Footnote 24, and increased reserves, please see: Snyder, John H. and W. Dolson Smith, "Environmental/Asbestos Liability Exposures: A P&C Industry Black Hole," Best P&C Supplement, March 28, 1994. Simpson, Eric M. and W. Dolson Smith, "P&C Industry Begins to Face Environmental and Asbestos Liabilities," Best P&C, January 29, 1996. Simpson, Eric M. and Mervyn S. Taylor, Cynthia S. Matthews, "Footnote 24 Ushers in a New Era of Asbestos, Environmental Disclosure," Best Week P&C Supplement, July 8, 1996. Unsigned article, "Insurers' Environmental and Asbestos Positions Improve," Standard & Poor's Credit Week, August 28, 1996, pp. 33.

⁸⁹ Staff, Superfund and the Insurance Issues Surrounding Abandoned Hazardous Waste Sites, Insurance Services Office, Inc., December 1995. Anderson, Dan R., "Financial and Organizational Impact of Superfund-Mandated Hazardous Waste Liabilities on the Insurance Industry," CPCU Journal, Spring 1996.

⁹⁰ Staff, "Why Fleet requires environmental insurance as a loan condition," ABA Banking Journal, September 1992; Cocheo, Steve, "Policies Shield Banks from Toxic Trouble," ABA Banking Journal, December 1993, pp. 53.

⁹¹ Pelland, Dave, "Promoting Environmental Awareness: Insurance Market Conditions Improving," Risk Management, May 1997, 44(5): 10; Hall, Evelyn, "EIL Insurance is Poised for Growth," Best's Review - P&C, April 1995.

⁹² Winans, Christopher, op. cit.

⁹³ Pelland, Dave, "Watching the Weather: Insurance Industry Examines Climate Change,"

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⁹⁴ CPCU Society, Columbus Chapter, "How Have the Catastrophes of 1992 Affected Solvency, Capacity, and Reinsurance in the Property and Casualty Industry?" CPCU Journal, June 1995. Dunleavy, Jeane, Robin Albanese, Matt Mosher, Eric Simpson, et al., "Greater Risks, Uncertain Rewards; Property and Casualty Insurance," Best's Review P&C, January 1997, 97(9): 56. Borden, Sara and Asani Sarkar, "Securitizing Property Catastrophe Risk," Federal Reserve Bank of New York: Current Issues in Economic and Finance, August 1996, 2(9). Treaster, Joseph B., "Even Nature Can be Turned Into a Security: High Yield and Big Risk with Catastrophe Bonds," New York Times, August 6, 1997.

⁹⁵ As of January 1998, no US insurance companies are signatories. See: Allred, Carolyn, "UN Asking US Insurers to Join International Environment Initiative," Business Insurance, November 3, 1997.

⁹⁶ Fossli, Karen, "Environment Conference: Insurers Turn Eco-Friendly," Financial Times (London), March 30, 1995, pp. 3. Fossli, Karen, "Big Insurers Unveil Pact on Environmental Risks," Financial Times (London), March 31, 1995, pp. 4. Unsigned article, "Environmental Pact Announced," Financial Times World Insurance Report, April 7, 1995. Unsigned article, "Insurers Launch Joint Effort To Tackle Environmental Risks," Environment Watch Western Europe, April 7, 1995, 4(7). Kirk, Don Lewis, "Deterring pollution: group offers plan for environmental risk management," Business Insurance, April 10, 1995. Williams, Frances, Business and the Environment: "Green Politics at a Premium - Why Insurers are Focusing On Ecology", November 29, 1995, pp. 12. Kirk, Don Lewis, "Insurers pledge to reduce environmental risk," Business Insurance, December 4, 1995. Staff, UNEP Conference on the Insurance Industry and the Environment: Implementing Environmental Commitment in the Insurance Industry, UN, May 20-21, 1996.

⁹⁷ Staff, The Impact of Catastrophes on Property Insurance, Insurance Services Office, Inc. January 1994. Staff, Superfund and the Insurance Issues Surrounding Abandoned Hazardous Waste Sites, Insurance Services Office, Inc., December 1995. Anderson, Dan R., "Financial and Organizational Impact of Superfund-Mandated Hazardous Waste Liabilities on the Insurance Industry," CPCU Journal, Spring 1996.

⁹⁸ Commercial banks accept deposits and extend credit to both consumers and corporations. Unlike investors, a commercial bank's focus on credit implies that a bank is more interested in the borrower's cash flow and ability to repay the loan with interest than in the underlying value of the borrower's assets, unless those assets are pledged as collateral. Further, a

bank is not always able to sell its loans to a borrower or to a third party if the debt has a long maturity date, as is typically the case with asset-backed loans. Globally, commercial banks represent the largest pool of private capital.

⁹⁹ The life insurance industry consists of two businesses: the selling of life insurance policies to consumers, and the investing of funds obtained in the form of premiums from these consumers. Life insurance policies guarantee consumers a predetermined monetary sum upon death or a specified age, whichever occurs first. Life insurance companies are risk-averse and tend to employ conservative investment strategies. Traditionally, the industry placed its assets in long-term bonds and mortgages with maturity dates that matched the anticipated claims by policyholders based on actuarial forecasts. This approach is no longer considered adequate to generate the returns desired and is being reevaluated.

¹⁰⁰ Investment banks function as the liaison between corporations that want to attract investment capital and investors that have money to buy part, or all of a company. Investment banking covers a wide range of functions, but generally focuses on equity rather than debt transactions. Investment bankers manage the buying and selling of stocks, bonds, and other financial instruments for their own account and on behalf of clients. They also manage the financing of new companies via initial public offering (IPOs) or private placements (the sale of financial instruments to a targeted group of investors).

¹⁰¹ United States v. Maryland Bank & Trust Co., 632 F. Supp. 573, 579 (D. Md. 1986)

¹⁰² At the time, Fleet Factors was the eighth largest commercial bank holding corporation in the US.

¹⁰³ United States v. Fleet Factors Corp., December 22, 1988.

¹⁰⁴ For a discussion of this topic see Pollard, Alfred, Clarification of Secured Party and Fiduciary Liability Under US Environmental Statutes, Bureau of National Affairs, Inc., November 4, 1996, pp. 772-778.

¹⁰⁵ McCreary, Jean H. and Denise D. Pursley, "Using Environmental Risk Management Policy to Avoid Environmental Liability," Commercial Lending Review, Fall 1997, 12(4): 62. Byrne, John and Thomas J. Greco, "Rx For Banking's Environmental Itch," ABA Banking Journal, February 1997, 89(2): 59. Cocheo, Steve, "Policies Shield Banks from Toxic Trouble," ABA Banking Journal, December 1993, pp. 53.

¹⁰⁶ Ganzi, John and Richard Eidlin, Bank of America: The Leading Environmental Bank—A Case Study, Summer 1993.

¹⁰⁷ Vista Environmental Information, Inc., "Environmental Product Endorsed by ABA," ABA Banking Journal, January 1993, pp. 75. Corbit, L. Sanders and Rush B. Lincoln, III, "Service Demystifies Environmental Reports," ABA Banking Journal, June 1993, pp. 78. Unsigned article, "Environmental Data Resources, Product Helps Assess Environmental Liability," ABA Banking

Journal, October 1994, pp. 102. Claritas, NPDC, "Tool Evaluates Environmental Risk," ABA Banking Journal, March 1994, pp. 78. Practising Law Institute, "Manual Assists in Commercial Loan Documentation: Hillman on Commercial Loan Documentation, 4th ed.," ABA Banking Journal, June 1994, pp. 82. Unsigned article, "Environmental Information and Imaging Sensors, New Environmental Software Pegged for Small Banks," Institutional Investors, Inc. - Bank Letter, March 27, 1995, pp. 6.

¹⁰⁸ Staff, Environmental Appraisal Checklist for Financial Institutions Disbursing IFC Funds, International Finance Corporation, March 20, 1997, pp. 19-21. For a discussion of the World Bank's current position, see: Steer, Andrew, "Ten Principles of the New Environmentalism," IMF Finance & Development, December 1996, 33(4): 4.

¹⁰⁹ Bank of America Environmental Services/Training Services (San Francisco, US), and GHK International (Birmingham, UK), prepared under contract to the European Bank for Reconstruction and Development, Environmental Risk Management for Financial Institutions: A Handbook, June 1995.

¹¹⁰ Presentation made at London Conference and in subsequent private communications.

¹¹¹ Unsigned article, "Sumitomo To Offer "Eco-Management Loans" Daily Environment Report, Bureau of National Affairs, Inc., February 1, 1996, pp. B-2 and B-3.

¹¹² Handout by Heinrich Hugenschmidt of Union Bank of Switzerland and Otti Biseng of Credit Suisse at the UNEP Conference on Banking and the Environment, May 1997.

¹¹³ This observation is based on private conversations with Swiss bankers and from the following publication: Knorzer, Andreas and Gabriel Pace, Environmental Shareholder Value, Bank Sarasin & CIE, February 18, 1998.

¹¹⁴ Unsigned article, "Insurers Launch Joint Effort To Tackle Environmental Risks," Environment Watch Western Europe, April 7, 1995, 4(7).

¹¹⁵ It appears that most investors are not looking at this issue in any material manner given the limited articles and items published in the mainstream financial press.

¹¹⁶ Unsigned article, "Survey: Ethical and Green Investing," Investors Chronicle, July 12, 1996. There is a large amount of literature on "socially responsible investing" and "green" investing as part of that movement. This approach to the use of EP is not within the scope of this report. The focus here is on the use of EP as a positive indicator of FP.

¹¹⁷ Blacconiere, Walter G. and Dennis M. Patten, "Environmental Disclosures, Regulatory Costs, and Changes in Firm Value," Journal of Accounting & Economics, November 1994, 18(3): 357-77.

¹¹⁸ Blacconiere, Walter G. and W. Dana Northcut, "Environmental Information and Market

Reactions to Environmental Legislation," Working Draft, November 9, 1995.

¹¹⁹ White, Mark A., "Investor Response to the Exxon Valdez Oil Spill," Conference Paper, Presentation to the Southern Finance Association Meetings, Sarasota, FL, November 1995.

¹²⁰ Bosch, J.C. and Insup Lee, "Environmental Regulations and Stockholders' Wealth: An Empirical Examination," Preliminary Working Paper, April 1, 1996.

¹²¹ Hamilton, James T., "Pollution as News: Media and Stock Market Reactions to the Toxics Release Inventory Data," Journal of Environmental Economics and Management, 1995, Vol. 28:98-113.

¹²² Snyder, Jonathan V. and C. H. Collins, "The Performance Impact of an Environmental Screen," Winslow Management, Environmental Management in a Global Economy—Conference Proceedings, Winslow Management Co., 1994.

¹²³ Clough, Richard Read, "Impact of an Environmental Screen on Portfolio Performance: A Comparative Analysis of S&P 500 Stock Returns," Duke University School of the Environment, 1997.

¹²⁴ White, Mark A., "Corporate EP and Shareholder Value," Conference Paper, Presentation to Southern Finance, FL, November 1995.

¹²⁵ Specifically, return on sales (ROS), return on assets (ROA), and return on equity (ROE).

¹²⁶ Hart, Stuart and G. Ahuja, "Does It Pay to Be Green?" University of Michigan School of Business Administration, September 1995.

¹²⁷ Philip, Christine, IRRRC Report: "Low Pollution Means High Returns, Pensions & Investments," May 15, 1995, pp. 6. Cohen, Mark, S. Fenn and J. Naimon, Environmental and EP: Are They Related?, IRRRC, Vanderbilt University, Owen Graduate School of Management and the IRRRC, April 1995.

¹²⁸ Feldman, Stanley J., Peter A. Soyka and Paul G. Ameer, "Does Improving a Firm's Environmental Management System and EP Result in a Higher Stock Price?" Journal of Investing, Winter 1997, 6(4): 87.

¹²⁹ Guerard, John B., "Additional Evidence on the Cost of Being Socially Responsible in Investing," The Journal of Investing, Winter 1997, 6(4).

¹³⁰ D'Antonio, Louis, Tommi Johnsen, and R. Bruce Hutton, "Expanding Socially-Screened Portfolios: An Attribution Analysis of Bond Performance," Journal of Investing, Winter 1997, 6(4): 79.

¹³¹ Kessler, Jon and Laura Gottsman, "Smart Screened Investments: Environmentally-Screened Equity Funds That Perform Like Conventional Funds," Journal of Investing, Scheduled To be published: 7(4), Fall 1998.

¹³² Griffin, Jennifer J. and John F. Mahon, "The Corporate Social Performance and Corporate Financial Performance Debate: Twenty-five Years of Incomparable Research," Business & Society, March 1997, 36(1): 5.

¹³³ Information was readily available on these three groups. Other environmental screens may be available, either to the investment community at large or to the clients of a particular firm. The inclusion of these does not constitute an endorsement.

¹³⁴ ICF Kaiser, sales material, "Does Improving A Firm's Environmental Management System and Environmental Performance Result in a Higher Stock Price?" December 1996. The Hartman Group, sales material, "The Significance of Environmental Actions on Public Company Stock Prices," Fall 1987.

¹³⁵ Endnote 100 provides a description of investment banks.

¹³⁶ Staff, "Earth in the Balance Sheet—How to Help Wall Street Put More Stock in Your Company's Eco-Efficiency Efforts," Green Business Newsletter, pp. 6.

¹³⁷ Winslow Management presentation to Environmental Support Center Board of Directors, February 1997.

¹³⁸ Mutual funds are the fastest growing pool of capital in the world. Individual investors own over 80 percent of all mutual funds, with the remainder owned by institutional investors. Mutual funds offer an extremely wide range of investment vehicles (primarily offered to individual consumers) that tend to be tailored to a specific set of criteria or focus. In general, mutual funds invest in publicly traded securities, notably stocks and bonds, under the specific governance guidelines of the funds' incorporation papers and investment policy.

¹³⁹ Unsigned article, "Survey: Fund Management," The Economist, October 25, 1997.

¹⁴⁰ See the following for a discussion of the growth of mutual funds and the rise of interest in specialty funds: Krumsiek, Barbara J., "The Emergence of a New Era in Mutual Fund Investing: Socially Responsible Investing Comes of Age," Journal of Investing, Winter 1997, 6(4): 25.

¹⁴¹ Environmental Value Fund - Prospectus, Uni-Storebrand, Oslo, Norway, 1996.

¹⁴² See: Edmunds, Marian, "Funding—A Measure of Performance," Financial Times (London), November 28, 1997, pp. 7. Staff, "US-Norwegian Alliance Spins Global Eco-Fund," Institutional Investor, July 8, 1996, No. 14, pp. 4.

¹⁴³ Staff, Swiss Bank Corporation, Eco Performance Portfolio—World Equities, September

1997, Prospectus Offering.

¹⁴⁴ Pension funds are employer-operated organizations designed to provide for employee retirement benefits by investing funds received from both the employer and the employee through payroll deductions. These funds operate under heavy government regulation, notably ERISA, as well as the specific operating and investment guidelines that are established during the incorporation process. These guidelines are periodically updated based on shareholder resolutions, trustee actions, and some governmental guidelines. Fund policies tend to determine the overall composition of investments (e.g., in a firm's own securities, international securities, real estate, and government bonds). These funds tend to have long-term investment horizons and are generally managed for low risk. US investment funds controlled about US \$4.7 trillion in assets.

¹⁴⁵ House, Richard, "Balance-Sheet Poison," Institutional Investor, August 1993, pp. 23.

¹⁴⁶ In 1996, this industry collected US \$250 billion in premiums, which was then invested. Historically, the industry has been invested in about 75 percent high-grade government and corporate bonds, with maturity dates that matched the timing of expected claims, 19 percent in equities, 2 percent in equities, and the remainder in miscellaneous investments or cash.

¹⁴⁷ Altman, Edward and Vanderhoof, Irwin. The Financial Dynamics of the Insurance Industry, 1995. Altman, Edward I. and Irwin T. Vanderhoof, The Strategic Dynamics of the Insurance Industry: Asset/Liability Management Issues, 1996. Burgh, Edward M., Mortgage Investing by Life Insurance Companies, 1983. Cummins, David, Investment Activities of Life Insurance Companies, 1977. Davis, E.P., Financial Market Activity of Life Insurance Companies and Pension Funds, 1988. Kirsch, Clifford E. The Financial Service Revolution: Understanding the Changing Role of Banks, Mutual Funds, and Insurance Companies, 1997. In addition to these books, there have also been frequent seminars and conferences on this subject in recent years.

¹⁴⁸ Ganzi and Neubert, op. cit. Ganzi, Seymour and Buffet, op. cit.

¹⁴⁹ The life insurance industry represents one of the largest pools of long-term investment capital in the world. As investors, life insurance companies tend to be risk-averse and employ conservative investment stages. See also Upton, Thomas S. and Michael L. Albanese, "Sharpening the Focus on Investment Management," Best's Review - L/H, January 1997, pp. 83.

¹⁵⁰ See endnote 98 for background on commercial banks.

¹⁵¹ Venture capital, also known as "private equity," provides capital to new, cash-poor, or rapidly expanding business, where high risk precludes financing through banks or other traditional means. Venture capital tries to realize profits within three to seven years when the company goes public, is acquired, merges with another company, or has its assets liquidated. In general, venture capital is attracted by attributes of individual entrepreneurs or management teams, rather than attributes of companies.

¹⁵² Any new business that involves the use of hazardous chemicals, volatile organic

compounds, or requires a permit to discharge into the air or water will face environmentally-related startup costs, which may be significant. The costs of ongoing compliance may also be an issue for these firms. Nothing in the literature review indicated that these regulatory barriers to entry created an issue that actively concerned venture capital firms.

¹⁵³ Silby, D. Wayne. "Social Venture Capital: Sowing the Seeds of a Sustainable Future," The Journal of Investing, Vol. 6:4, Winter 1997. Star, Marlene Givant, "IFC Report Details Emerging Markets Boom," Pensions & Investments, September 30, 1996.

¹⁵⁴ Silby, D. Wayne, "Social Venture Capital: Sowing the Seeds of a Sustainable Future," Journal of Investing, Winter 1997, 6(4): 108.

¹⁵⁵ Foundations are nonprofit organizations established to manage a pool of capital that they invest or lend, and to distribute grants consistent with the mission or philosophy of the organization. US-based foundations control about US \$200 billion in assets. Some of the foundations at the leading edge of factoring environmental/financial performance into their operating approach are the Jessie Smith Noyes Foundation, Wallace Global Fund, and the CS Mott Foundation.

¹⁵⁶ Obviously, the contributors to global environmental concerns may be placing themselves at risk as well.

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Exhibit A

Statement of Environmental Commitment by the Insurance Industry

Preamble (November 1995)

The insurance industry recognizes that economic development needs to be compatible with human welfare and a healthy environment. To ignore this is to risk increasing social, environmental and financial costs. Our Industry plays an important role in managing and reducing environmental risk, in conjunction with governments, individuals and organizations.

We are committed to work together to address key issues such as pollution reduction, the efficient use of resources, and climate change. We endeavor to identify realistic, sustainable solutions.

1. General Principles of Sustainable Development

1.1 We regard sustainable development, defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs, as a fundamental aspect of sound business management.

1.2 We believe that sustainable development is best achieved by allowing markets to work within an appropriate framework of cost efficient regulations and economic instruments. Government has a leadership role in establishing and enforcing long term priorities and values.

1.3 We regard a strong, proactive insurance industry as an important contributor to sustainable development, through its interaction with other economic sectors and consumers.

1.4 We believe that the existing skills and techniques of our industry in understanding uncertainty, identifying and quantifying risk, and responding to risk, are core strengths in managing environmental problems.

1.5 We recognize the precautionary principle, in that it is not possible to quantify some concerns sufficiently, nor indeed to reconcile all impacts in purely financial terms. Research is needed to reduce uncertainty but cannot eliminate it entirely.

2. Environmental Management

2.1 We will reinforce the attention given to environmental risks in our core activities. These activities include risk management, loss prevention, product design, claims handling and asset management.

2.2 We are committed to manage internal operations and physical assets under our control in a manner that reflects environmental considerations.

2.3 We will periodically review our management practices, to integrate relevant developments of environmental management in our planning, marketing, employee communications and training as well as our other core activities.

2.4 We encourage research in these and related issues. Responses to environmental issues can vary in effectiveness and cost. We encourage research that identifies creative and effective

solutions.

2.5 We support insurance products and services that promote sound environmental practice through measures such as loss prevention and contract terms and conditions. While satisfying requirements for security and profitability, we will seek to include environmental considerations in our asset management.

2.6 We will conduct regular internal environmental reviews, and will seek to create measurable environmental goals and standards.

2.7 We shall comply with all applicable local, national and international environmental regulations. Beyond compliance, we will strive to develop and adopt best practices in environmental management. We will support our clients, partners and suppliers to do likewise.

3. Public Awareness and Communications

3.1 Bearing in mind commercial confidence, we are committed to share relevant information with our stakeholders, including clients, intermediaries, shareholders, employees and regulators. By doing so we will improve society's response to environmental challenges.

3.2 Through dialogue with public authorities and other bodies we aim to contribute to the creation of a more effective framework for sustainable development.

3.3 We will work with the United Nations Environment Programme to further the principles and goals of this Statement, and look for UNEP's active support.

3.4 We will encourage other insurance institutions to support this Statement. We are committed to share with them our experiences and knowledge in order to extend best practices.

3.5 We will actively communicate our environmental activities to the public, review the success of this Statement periodically, and we expect all signatories to make real progress.

Steering Committee :

General Accident, Perth, UK.

Gerling-Konzern Globale, Cologne, Germany.

N.P.I., London, United Kingdom.

Swiss Re, Zurich, Switzerland.

Sumitomo Marine & Fire, Tokyo, Japan.

Storebrand, Oslo, Norway.

United Nations Environment Programme, Geneva, Switzerland

Exhibit B

UNEP Statement by Financial Institutions on the Environment & Sustainable Development (As Revised - May 1997)

We members of the financial services industry recognize that sustainable development depends upon a positive interaction between economic and social development, and environmental protection, to balance the interests of this and future generations. We further recognize that sustainable development is the collective responsibility of government, business, and individuals. We are committed to working cooperatively with these sectors within the framework of market mechanisms toward common environmental goals.

1. Commitment to Sustainable Development

1.1 We regard sustainable development as a fundamental aspect of sound business management.

1.2 We believe that sustainable development can best be achieved by allowing markets to work within an appropriate framework of cost-efficient regulations and economic instruments. Governments in all countries have a leadership role in establishing and enforcing long-term common environmental priorities and values.

1.3 We regard the financial services sector as an important contributor towards sustainable development, in association with other economic sectors.

1.4 We recognize that sustainable development is a corporate commitment and an integral part of our pursuit of good corporate citizenship.

2. Environmental Management and Financial Institutions

2.1 We support the precautionary approach to environmental management, which strives to anticipate and prevent potential environmental degradation.

2.2 We are committed to complying with local, national, and international environmental regulations applicable to our operations and business services. We will work towards integrating environmental considerations into our operations, asset management, and other business decisions, in all markets.

2.3 We recognize that identifying and quantifying environmental risks should be part of the normal process of risk assessment and management, both in domestic and international operations. With regard to our customers, we regard compliance with applicable environmental regulations and the use of sound environmental practices as important factors in demonstrating effective corporate management.

2.4 We will endeavor to pursue the best practice in environmental management, including energy efficiency, recycling and waste reduction. We will seek to form business relations with partners, suppliers, and subcontractors who follow similarly high environmental standards.

2.5 We intend to update our practices periodically to incorporate relevant developments in environmental management. We encourage the industry to undertake research in these and related areas.

2.6 We recognize the need to conduct internal environmental reviews on a periodic basis, and to measure our activities against our environmental goals.

2.7 We encourage the financial services sector to develop products and services which will promote environmental protection.

3. Public Awareness and Communication

3.1 We recommend that financial institutions develop and publish a statement of their environmental policy and periodically report on the steps they have taken to promote integration of environmental considerations into their operations.

3.2 We will share information with customers, as appropriate, so that they may strengthen their own capacity to reduce environmental risk and promote sustainable development.

3.3 We will foster openness and dialogue relating to environmental matters with relevant audiences, including shareholders, employees, customers, governments, and the public.

3.4 We ask the United Nations Environment Programme (UNEP) to assist the industry to further the principles and goals of this Statement by providing, within its capacity, relevant information relating to sustainable development.

3.5 We will encourage other financial institutions to support this Statement. We are committed to share with them our experiences and knowledge in order to extend best practices.

3.6 We will work with UNEP periodically to review the success in implementing this Statement and will revise it as appropriate.

We, the undersigned, endorse the principles set forth in the above statement and will endeavor to ensure that our policies and business actions promote the consideration of the environment and sustainable development.

Exhibit C

European Union

The Role of Financial Institutions in Achieving Sustainable Development

Executive Summary

**THE ROLE OF
FINANCIAL INSTITUTIONS
IN ACHIEVING
SUSTAINABLE DEVELOPMENT**

REPORT

TO THE EUROPEAN COMMISSION

BY

DELPHI INTERNATIONAL LTD

IN ASSOCIATION WITH ECOLOGIC GMBH

NOVEMBER 1997

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This study was commissioned by the Directorate-General XI (Environment, Nuclear Safety and Civil Protection) of the European Commission. It does not however express the Commission's official views. The responsibility for the views expressed lies solely with the authors.

EXECUTIVE SUMMARY

Introduction

The European Community Programme of Policy and Action in Relation to the Environment and Sustainable Development (the Fifth Environmental Programme) (OJ 93/C 138/27) recognised the importance of financial institutions by stating that "financial institutions which assume the risk of companies and plants can exercise considerable influence - in some cases control - over investment and management decisions which could be brought into play for the benefit of the environment". Despite this, little work has been done by the Commission on the role of the financial institutions in achieving sustainable development.

An even more fundamental relationship is indicated by an alternative definition of sustainable development: "*a process of development which leaves at least the same amount of capital, natural and man-made, to future generations as current generations have access to*". This makes it clear that sustainable development is about capital allocation and thus should be at the core of financial markets activity.

On a more practical level, financial institutions interact with the environment in a number of ways:

- as *investors* - supplying the investment needed to achieve sustainable development.
- as *innovators* - developing new financial products to encourage sustainable development - e.g. in energy efficiency.
- as *valuers* - pricing risks and estimating returns, for companies, projects and others.
- as *powerful stakeholders* - as shareholders and lenders they can exercise considerable influence over the management of companies.
- as *polluters* - while not "dirty" industries, financial institutions do consume considerable resources.
- as *victims* of environmental change - e.g. from climate change.

Financial markets present an opportunity for environmental policy, particularly useful in view of the need for a wider range of policy instruments. In view of the indirect nature of many of the interactions above, policies are likely to be most effective if they aim to complement and work with existing financial activity.

To that end, a transactional model of the financial markets is used, to indicate how it is possible to influence financial transactions. It illustrates the key roles of information and analysis.

The Commercial Banking sector

The greatest potential of the commercial banking sector is in its relationship with Small and Medium sized Enterprises, where banks can be very influential through their lending practices and by providing information. Commercial banks have less influence over most larger companies. There is, however, scope for them to influence consumer behavior through the financial products they offer.

To date the most commercial banks have focused on two areas: Firstly, many have made

considerable progress in developing *internal environmental management* systems to reduce their own environmental impact. Secondly, most banks include some environmental analysis into their *credit assessment* process although this tends to be focused on liability.

The United Nations Environmental Programme (UNEP) has established a statement on Banks and the Environment which over 90 banks have signed, including a substantial number from the EU. It is the leading international initiative on banks and environment and is certainly encouraging a number of banks to take the environment seriously.

A smaller number of leading banks have taken their activities further, and for instance have started to take a *wider view of environmental factors in credit assessment*, including developing checklists and other procedures.

One particularly encouraging area of activity is providing *practical support to small businesses* on how to manage their environmental impacts, through information packs and other support.

Where banks have been less progressive is in developing *new financial products* with an environmental perspective for both business and individuals, such as energy efficiency loans. Encouraging the development of such products appears desirable.

There has been considerable work in developing *environmental management systems* (EMS) and reporting for banks, including possibly an extension to EMAS. It is important that such initiatives focus on the environmental impacts of financial products rather than merely the impact of internal operations. In view of the generally systematic approach to business by commercial banks, further use of EMS appear to be an effective way forward for the sector.

The Investment sector

The potential of the investment sector lies in the influence it has over large companies. It can send signals to industry in the pricing of new capital for companies and in the on-going valuation of quoted companies as well as directly through the use of its rights as shareholders and owners.

To date, as whole, investors are probably less interested in the environment than bankers. However, a number of pressures are emerging on the investment sector:

- *Leading companies* have become increasingly frustrated with the failure of the investment community to recognise and reward the environmental progress they have made. In particular, the international business organisation, WBCSD, has been active in this area, developing the concept of eco-efficiency and encouraging its use among investors.
- There is growing interest from *individual investors* in environmentally responsible investment, and this has led to the development of some progressive environmental investment funds. Institutional investors have also started to explore this area, reassured by the good investment performance of such funds. As a "green" product with no price or quality premium, the potential market for such products is likely to be substantial.

- Another avenue that some investors have pursued is *shareholder activism*. They have become frustrated with the indifference of investing institutions and are taking their concerns directly to large companies. This has proved effective in the US, but is more limited in Europe where shareholders' rights are less developed - there may be scope to develop it in the EU.
- *Environmental NGOs* have also started to target fund managers and investment banks over their investments and involvement with environmentally damaging companies. To date they have not had major success, but have started to influence the sector.
- Finally, a few organisations among the investment sector have started to take environmental issues more seriously and may be creating some *peer pressure* for change. While much skepticism exists and should not be underestimated, there are signs that attitudes may be changing.

A key concern for the investment sector is the relationship between environmental performance and investment performance. Here the evidence on balance suggests that environmental performance does contribute to good financial performance. However, many in the investment sector remain unconvinced, and action is needed both to persuade doubters and reinforce signals, e.g. through the development of environmental taxation.

To encourage the investment sector to incorporate environmental issues a number of obstacles need to be overcome. Two key obstacles are market inertia in investment practices, and the balance between long term and short term analysis. However, the most important issue is probably difficulties in obtaining good quality information in ways that the sector can understand and use. Ways need to be found to provide relevant information to the sector.

The Insurance sector

The potential of insurance sector in achieving sustainable development lies in its ability to price various types of environmental risk and to help pay for environmental damage. Potentially environmental issues can affect risks in a number of areas, but to date the industry has taken an issue based approach and has focused on the environment in two main areas:

- *Environmental liability* has had a seriously adverse affect on the industry, particularly in the US and has resulted in the industry taking a very cautious approach to environmental issues. It is important that in any development of environmental liability in the EU the insurance industry be actively involved and reasonably supportive. Unrealistic expectations of the extent to which the industry can price environmental risks accurately should be avoided.
- The industry has also become clearly concerned about the potential impact of *climate change* on its business. Changing climate at best undermines the historic basis for evaluating risk and at worst could significantly increase losses, from increased storms and floods, to the extent that even the very viability of the industry could be threatened. In response, the leaders in the industry have developed a comprehensive set of measures, ranging from an increasing lobbying at the climate change convention, through working with governments on research and preventative measures, to adjusting premiums and their areas of activity.

UNEP has also launched an Insurance Industry Initiative on sustainable development. It too has been successful and has strong European representation. Members of the initiative have been particularly active in the areas of climate change and asset management.

Beyond these areas, however, there has been little research by the industry of the implications of sustainable development for the insurance sector at a fundamental level. Similarly, many outside the industry have a poor understanding of the practicalities of the industry, leading to limited work on how insurance could contribute to sustainable development.

Companies, Investors and the Environment

Companies increasingly see environmental issues as being of relevance to their business development, yet financial markets, particularly investors are uninterested. Companies are increasingly aware of the environmental pressures they are under and have developed a range of practical tools to address them.

There is increasing understanding of the financial implications of these pressures among leading specialists, yet most in the financial community pay only limited attention to them. *Information* is the key to financial evaluation, but there is limited useful information on environmental performance and management. The main existing sources of information are not geared to financial audiences:

- Environmental reporting is targeting multiple audiences and many companies do not report.
- The potential with annual reports is erratically exploited and lacks standardisation.
- Publicly available information faces substantial practical obstacles.

To address this there is potential to *develop standardised and financially useful environmental reports*, potentially as part of the annual reports, encompassing financial information, environmental performance data and qualitative information on environmental policy and management.

An alternative approach is through the development of *environmental rating agencies* who can provide a summary analysis geared to the needs of the financial markets. At present such services have only limited appeal, but they offer long term potential. An effective way of encouraging the development of these services would improve the quality of information made available through the public regulators.

The Environmental Business Sector

The environmental business sector consists of businesses ranging from traditional environmental businesses, such as waste management, to emerging "green" pioneers, such as renewable energy and eco-tourism. They have a critical role to play in achieving sustainable development and thus ensuring they have access to private sector finance is crucial.

Despite apparently good prospects, with rapidly growing markets, the financial performance of the sector has been disappointing to date. Indeed, the poor performance of many high profile companies has been a major factor in creating a negative impression about the environment with financial institutions.

A number of factors are identified for this. Several of them are closely related to the public sector and policy issues, both in the way that the environmental markets are often dependent on policy development and in the active role of public sector finance in this area.

In response to the challenges faced by environmental sector companies, a number of innovative approaches and specialist organisations have developed, including project finance, venture capital, leasing, environmental and ethical banks, specialist environmental financiers, and environmental funds. However, the sector may place excessive emphasis on emerging sources of finance or stretch existing finance into new areas and there is a continuing need for innovation.

To encourage the financial markets to support the sector, there is a need for measures at both a macro level, such as clear policy development and dissemination, and micro level, such as training on financial markets for environmental entrepreneurs. There is scope to support innovation in finance to the sector. In addition, public sector financial support programmes to the sector could be adapted to work more closely with the financial sector.

Environmental Policy

Environmental policy can be developed in a number of areas to encourage financial institutions to support sustainable development.

- The EU directly *provides funding* to protect the environment in a number of ways. Particularly where such support is targeted at the private sector there is scope to ensure that it complements and encourages the involvement of financial institutions.
- There is scope for the European Environment Agency to improve the *quality of information* made publicly available, so that it can be used by financial institutions, and additionally to brief financial institutions on environmental pressures and policy development within the EU.
- There is increasing pressure to alter the structure of *taxation* in favour of environmental issues. Such issues would help strengthen the contribution that environmental performance enhances financial performance. There is widespread support for such taxes among the financial community.
- *Liability* is potentially another effective market mechanism. However, as it requires the involvement of the insurance industry to be effective, they should be actively consulted as to how best make it work.
- There is scope to expand both the *EMAS scheme* and the *Eco-label scheme* to encompass financial institutions and products. EMAS would encourage financial institutions to take a systematic approach to environmental management. An Eco-label on green financial products would aid marketing and reward innovation.

Financial Policy

Existing European financial policy regarding banks, insurance and investment services is

principally focused on creating a single market for financial services. There appears only modest scope to encompass environmental issues in most areas, as it is not evident that the environmental risks are sufficient to warrant special treatment by regulators.

In *bank regulation* there is a potential argument for making some form of environmental management compulsory or by requiring the disclosure of lending to high risk sectors.

There is a potential for action in the areas of *consumer protection*, where the Commission has a clear mandate and effective policy actions are possible, desirable and justifiable.

The EU also regulates *disclosure and listing requirements* for companies and there is potential to develop a formal standard for environmental disclosure by companies.

Analysis

A key issue in the inclusion of environmental issues is the *significance* of environmental issues - while potentially of some relevance, many environmental issues are of insufficient importance to be a priority, particularly in view of other concerns and practical difficulties. Improving information flows would be an effective way of making it easier for financial institutions to incorporate environmental considerations. There is still potential to reinforce the link between environmental performance and financial performance, notably through the use of economic instruments such as environmental taxes.

Recommendations

Ten policy options are recommended for consideration by the Commission. The options have been chosen on the basis of the potential to have a major long term environmental benefit. In addition many of the policy options chosen do not involve the expenditure of substantial public funds or impose major burdens on industry. Indeed, one of their key aspects is that they are likely to improve the functioning of existing policy measures.

The Commission should take a lead role in *improving the flow of environmental information* relevant to the financial markets. This could be done:

1. through standardisation and improvement of information currently being collected and made available by environmental regulators
2. through the development of environmental reporting standards targeted at the financial markets.

The Commission should also consider taking action to *increase the demand for environmentally responsible investment*. Such actions would create substantial demand based incentives for financial institutions to develop environmental expertise and products. Actions include:

3. as part of its involvement in consumer investment protection, requiring financial institutions to ask investors if they are concerned about how their money is invested environmentally or ethically
4. developing, as part of its eco-labeling scheme, a label for environmentally responsible investments.

The Commission should encourage the *development of environmental management* at financial institutions, through:

5. supporting information dissemination on best practice for financial institutions.

6. the extension of the EMAS scheme to include financial institutions. This would require a greater focus on impacts of products.

More formal control through the financial regulatory mechanism is possible, for instance by making environmental management mandatory, by requiring disclosure of exposure to high risk sectors, by looking at the potential for voluntary investment agreements, and by looking at the role of the European Central Bank. However, they are probably not a priority at present.

The Commission should consider ways to encourage the *development of environmental financial products* for business and consumers. One cost effective mechanism for the Commission would be:

7. to support awards for innovation in environmental finance. This would provide an incentive for companies, and would enable publicity and dissemination.

The Commission could also consider the use of direct financial support in the product development stage of new environmental financial products and initiatives, recognizing that the cost and risks of product analysis and development are a major obstacle to their deployment, although this may be best left to Member States.

The Commission is also advised to consider ways to *improve its existing support* to the environmental business sector:

8. by investigating the potential role for public sector investment banks to take the lead in encouraging private sector finance to support the sector
9. by improving the quality of information on the Commission's environmental support activities, and using financial institutions to disseminate it more widely
10. by involving the financial markets more closely in these support activities, thus ensuring that the recipients are aware of broader financing issues and the financial sector is able to step in as public sector support ends.

Taken together these policy actions could help actively involve financial institutions in achieving sustainable development and could be a powerful tool in achieving the objectives of the Fifth Action Programme.

Exhibit D

ENVIRONMENTAL REPORTING: AN APPROACH TO GOOD PRACTICE (PUBLISHED IN FEBRUARY 1997 BY THE DEPARTMENT OF THE ENVIRONMENT, UNITED KINGDOM)

INTRODUCTION

1. The Advisory Committee on Business and the Environment (ACBE) was originally appointed in 1991 by the Secretary of State for the Environment and the Secretary of State for Trade and Industry. The Committee comprises a number of leading business people, and it is charged with giving Ministers advice on specific aspects of the interaction between business and the environment, from a business point of view. A Financial Sector Working Group, led by Derek Higgs, Chairman of Prudential Portfolio Managers Limited, has examined the growing importance of environmental management to the financial community from the point of view of risk management. This position paper sets out ACBE's views and proposes an approach to good practice for businesses to follow in reporting on their environmental performance to financial audiences.
2. ACBE considers that improved communications on environmental matters between financial institutions and the businesses with which they deal will be in the best interests of both parties. For investors, lenders and insurers (and their advisers), better information will lead to an improved evaluation of the financial risk associated with the environmental performance of existing or potential clients. For the businesses being evaluated, the acts of collecting and presenting relevant information may themselves yield scope for improved management practices, leading to increased competitiveness. It may also lead to better terms being offered by financial institutions - or at least no penalties being exacted.
3. These guidelines are directed at all businesses. ACBE appreciates that they will be more relevant to larger, publicly quoted companies than to smaller ones. Smaller companies can already claim dispensations from full reporting requirements as regards their statutory accounts, and ACBE stresses that its guidance on environmental reporting should be viewed in the context of standard financial reporting requirements. ACBE urges smaller companies, however, to consider the benefits (in terms, for example, of maintaining compliance with regulations and retaining the business of important customers), as well as the costs, of collecting relevant environmental performance information in a reportable form compatible with that suggested by these guidelines.
4. Nonetheless, a challenge evidently remains, in the formulation of a language in which the financial implications of environmental performance can be communicated in terms which permit comparability over time and between like businesses. ACBE's Financial Sector Working Group prepared a set of draft Guidelines for Environmental Reporting to the Financial Sector in Spring 1996. They created much interest, among reporting businesses, the financial community, the professional institutions and informed observers. Almost without exception, respondents welcomed, in principle, ACBE's initiative. The Group held a workshop in October 1996 to discuss the constructive comments from respondents. The final version of the Guidelines take these views into account.

5. It is emphasized that ACBE's Guidelines carry no official endorsement from financial or other authorities, and have no mandatory force. Nonetheless, as the appended lists of those who contributed to the draft and those who responded to it show, the present version can be taken to be an authoritative set of guidance notes on good practice, the adoption of which should yield the desired improvement in communications between business and that important set of stakeholders, the financial community.

ENVIRONMENTAL INFORMATION AND THE NEEDS OF THE FINANCIAL AUDIENCE

6. Several analyses and sets of guidance over recent years have made the point that the various stakeholders in a business have differing, if equally legitimate, requirements for information about its environmental performance. The financial community is concerned, generically, with the evaluation of risk in assessing whether to lend to, insure, or invest in a business (or to advise others about these matters). Annex 1 gives some concrete examples of environmental performance having a material impact on financial performance.
7. Without relevant, quantified, and comparable data, the financial community will be making its judgments on risk with incomplete information. Further, financial institutions need to know whether there is evidence that the management of the business is properly in control of its performance. Does it breach its permitted discharge limits and how closely does it operate to those limits? Do trends indicate steady improvement or deterioration? How often do unforeseen, accidental, events occur? Is it accredited to a recognized environmental management systems standard?
8. Clearly, the institutions will find it valuable to examine adequately reported financial, physical and managerial information on these topics. The evidence is beginning to mount that businesses are being asked more frequently to provide it. ACBE's Guidelines are not designed with a view to stimulating more environmental reporting as an end in itself; their underlying aim is to improve the capacity of the financial community to evaluate and deal with the implications of environmental risk. Greater insight on the part of the financial world should also lead to benefits for the businesses prepared to report, fully and comparably, on their performance.
9. These Guidelines are concerned with presentation of environmental information in the formal documents, some or all of which all reporting businesses prepare: the Annual Accounts, the Operating and Financial Review in its Annual Report, and a stand-alone environmental report if one is produced. Only a few companies, at present, prepare all three sets of material, and indeed only a limited number make any reference to environmental matters in their published financial documents.

ENVIRONMENTAL REPORTING: FORMAL DOCUMENTS

The Annual Accounts

10. The professional accounting bodies (in the UK, across Europe and in North America) are currently examining their standards and conventions as regards the financial reporting of

environmental costs and liabilities. In the main, these studies conclude that existing accounting standards and practices will yield reasonably comparable, quantified information on material environmental costs and liabilities, whatever the reporting business.

10.1 Existing requirements for financial statements

The present requirements of UK company law and existing and proposed accounting standards cover the following accounting issues of recognition and measurement which may have environment related implications:

- ◆ balance sheet provisions for liabilities and risks;
- ◆ estimation of the amount of a contingency;
- ◆ provisions for long term decommissioning costs;
- ◆ capitalization of costs;
- ◆ offsetting of liabilities and expected recoveries;
- ◆ asset impairment and provisions for repair costs;

as well as the following issues regarding disclosure in financial statements:

- ◆ the position and/or separate disclosure of environmental provisions in the balance sheet;
- ◆ environment related disclosures required in the Notes to the Accounts (valuation methods and accounting policies; exceptional environmental items; disclosure and details of 'other provisions'; contingent environmental liabilities).

Subject to the application of the materiality concept, these accounting and disclosure requirements already apply to all companies regardless of size or sector.

10.2 Discretionary financial disclosures and environmental costs

In recent years there have been many examples of companies making discretionary disclosures of financial information, over and above the statutory minimum. Examples of such discretionary disclosures which, it has been suggested*, it would be useful for the financial community to be aware of, include:

- ◆ the amount of environmental expenditure charged to the profit and loss account;
- ◆ the amount of environmental expenditure capitalized, to the extent that it can be clearly differentiated from other capital expenditure;
- ◆ the amount of costs incurred as a result of fines and penalties for non-compliance with environmental regulations, and compensation to third parties, where material.

There is some debate regarding:

- ◆ the ease with which environmental capital expenditure can be separately identified; and
- ◆ the actual usefulness of the information in interpreting corporate environmental performance - for example, is a low level of environmental expenditure to be interpreted more or less favourably than a higher level?

Nevertheless, it is important that whenever such discretionary financial disclosures are made, the accounting policies and definitions used are fully disclosed and that, wherever possible, comparative data compiled on a similar basis is also disclosed.

10.3 Non-financial discretionary disclosure

Finally, there is some non-financial environment related data which, it has been argued*, could also be of use to the financial sector. This includes:

- ◆ where environmental issues are relevant to a complete understanding of the financial position and performance of the undertaking, a description of the respective issues and the

undertaking's response to them. Summary data of a non-financial nature can be very useful for this purpose. Clearly this is likely to affect businesses in some industries more than those in others;

- ◆ the policy that has been adopted by the enterprise in respect of environmental protection measures;
- ◆ the improvements that have been made in key areas of environmental protection;
- ◆ the extent to which environmental protection measures, arising from changes in future legal requirements that have already been enacted or substantially enacted into law, are in the process of implementation;
- ◆ reference to other quantitative or qualitative environmental information provided in a separate environmental report.

This information is very unlikely to have to be included in a company's audited financial statements. Financial audiences would prefer to see such disclosures being made in the annual report itself, rather than in a stand-alone environmental performance report. Such disclosures could be made within the Operating and Financial Review (see below). Where reporting companies choose to disclose such information through a stand-alone environmental report, there should be cross references to relevant data in the annual accounts.

ACBE strongly supports continuous experimentation by businesses with this type of non-financial discretionary disclosure through the unaudited section of the annual report to shareholders, but has no wish to attempt to prescribe their precise form or content.

11. The Accounting Standards Board published a discussion paper earlier in 1996 on provisioning and the recognition of liabilities, which included a section on environmental liabilities. The Institute of Chartered Accountants in England and Wales issued a paper on 'Environmental Issues in Financial Reporting' in October 1996. The EU's Accounting Advisory Forum also published a report on environmental costs and liabilities in April 1996, while other European level bodies are examining auditing practices and the preparation of 'opinions'. ACBE welcomes these studies and urges the preparers of reports to take account of their conclusions.

The Operating and Financial Review

12. The Financial Reporting Council strongly recommends listed companies to support Operating and Financial Reviews (OFRs) alongside their annual financial statements, as narrative amplifications of past performance and planned strategic direction. The OFR format, as drawn up by the Accounting Standards Board, explicitly provides for the inclusion of environmental information. Listed companies should thus ensure that their OFRs include descriptive and quantitative details of the environmental risks they face, the environmental costs they have incurred, and the environmental initiatives they have taken. The discussion should be linked to amounts charged, provided for or disclosed in the Accounts, and it would thus cover capital and revenue expenditure, liabilities and provisions.

13. ACBE considers that the OFR should also state whether a formal environmental management system is in operation, and the extent to which management action has led to changes in the business's environmental performance. It should for example, include a statement of the business's record as regards its compliance with environmental requirements, with an indication of significant infringements of them. The policy for managing environmental risks should be stated; this will help to demonstrate and ensure appropriate Board responsibility towards environmental issues and their integration throughout the business.

The Environmental Report

14. ACBE is concerned to encourage more widespread dissemination by businesses of their environmental affairs to all audiences and stakeholder groups. Often this will best be done through the medium of a specially prepared environmental report. Such a report might be a separate section in a standard Annual Report aimed largely at the financial sector and shareholders, or a separate publication, targeted at a wider range of stakeholders. Individual firms hold different views about the merits of each approach, but ACBE feels that a stand-alone environment report is a complement to, not a substitute for, the inclusion of environmental information in the annual accounts.
15. When structuring a report for a financial audience, the key messages to convey will be strategic, illustrating, in particular, the extent to which the company's environmental management system implements its environmental policy and is an integral part of its overall corporate plan and business operations. Data that can be benchmarked against similar companies will be especially valuable. More work is needed to identify appropriate measures of performance and develop guidance on measurement and monitoring. Reporting companies and their financial audience should work together to ensure that such indicators are useful and meaningful.
16. Factual information in an environmental report needs, of course, to be compatible with that in the OFR and the Accounts, and there should be adequate cross references between them. The report should include physical and technical data, and social information such as that on health and safety. Consistency of preparation is needed to permit comparisons across time and with comparable businesses. Details should be included of the systems and controls used by the business to monitor compliance with its own policy and with regulatory requirements.
17. The report should where possible quantify the financial implications of the reported physical performance measures, giving details of such matters as fines and prosecutions. Comparisons with peer group businesses, perhaps with performance measures established by trade associations, would be helpful where possible.
18. There should be a Directors' Responsibility statement which makes it evident that there is clear Board approval for the report.

Independent Review

19. An authoritative, independent, review of an environmental report can be a major spur to improving the quality, integrity and credibility of its content. Different forms of review may be appropriate for different parts of the material presented: environmental liabilities and costs will be reported in the Accounts and thus subject to financial audit, while physical information in the OFR and environmental reports may be scrutinized by environmental auditors. Their skills differ and they are regulated by different professional bodies; it would be valuable if a coordinated approach could be taken by the two review functions. The following points should also be noted:
- (i) Independent verification should be encouraged but not made mandatory. The pace of its development should be determined by user demand and the availability of suitably qualified verifiers.
 - (ii) The Auditing Practices Board, in consultation with the UK Accreditation Service, could be charged with investigating the feasibility of developing standards for verification of the disclosures, which should be compatible where possible with those of the Eco-Management and Audit Scheme.
20. ACBE appreciates that, with the reporting field itself in a state of rapid evolution, a flexible approach to the auditing and review process for environmental information is required. The remit of the financial auditor in respect of the financial accounts is well established, but differing forms of scrutiny may be appropriate for environmental information, depending on where it occurs.

See, for example, the EC Accounting Advisory Forum (1996) and the European Federation of Financial Analysts (1995)

ANNEX A: EXAMPLES OF ENVIRONMENTAL PERFORMANCE HAVING MATERIAL FINANCIAL IMPLICATIONS

- 0 Capital expenditures required for compliance with BATNEEC process authorisations under EPA 1990
- 1 Capital expenditure for the remediation of contaminated land - or provisions for this if a future liability can be foreseen
- 2 Capital expenditures which may ensue from the need to respond to specific customers' requirements - the competitive 'licence to operate'
- 3 Revenue expenditure on improved waste management, thereby minimizing the burden of landfill taxes
- 4 Capital or revenue costs in improved management practices, e.g. to attain energy, or materials utilisation rates per unit of output which match those of comparable competitors.
- 5 The cost of dealing with unexpected environmental impacts - whether accidental discharges due to operator error or arising from inherently hazardous processes - and whether in the form of physical damage to be rectified, or the payment of fines or damages imposed by the regulators or the courts.

ANNEX B: RESPONDENTS WHOSE VIEWS WERE TAKEN INTO ACCOUNT IN PREPARING THE REVISION AND/OR THOSE ATTENDING THE WORKSHOP

Airpocket Design
Albright & Wilson
Auditing Practices Board
Biffa Waste Services
British Gas
British Secondary Metals Association
Central & West Lancashire Chamber of Commerce
Confederation of British Industry
Chris Burgess
Credit Suisse
Deloitte and Touche
ECS Underwriting
EIRIS Services
Eclipse Research Consultants
En-Venture
Environment Agency
Environmental Industries Commission
H A Masons Metals
HSBC Gibbs
The Hundred Group of Finance Directors
The Institute of Chartered Accountants in England and Wales
Jupiter Asset Management
King Sturge & Co
Lloyds TSB Group
London Chamber of Commerce & Industry

London Transport
Loss Prevention Council
Morgan Grenfell Asset Management
Nuclear Electric
Pearson
PowerGen
The Royal Institution of Chartered Surveyors
Simmons & Simmons
Thames Water
UK Centre for Economic and Environmental Development
United Utilities
University of Hertfordshire
Wolverhampton Business School
Zeneca

ENVIRONMENTAL REPORTING WORKING GROUP

Derek Higgs (Chairman)

Roger Adams

Janet Asherson

Brian Birkenhead

Robert Charlesworth

Clare Craig

Bill Dale

Brian Griffin

Philip Hillman

Philip Jones

Mike Kelly

Robert Langford

Andrew Lennard

Jon Symonds

Tessa Tennant

Hilary Thompson

Charles Duff (Secretary)

Chartered Association of Certified Accountants

Confederation of British Industry

National Power

Auditing Practices Board

Confederation of British Industry

SBC Warburg

Royal and Sun Alliance Insurance

King Sturge & Co

Institute of Investment Management and Research

NatWest

Institute of Chartered Accountants in England & Wales

Accounting Standards Board

KPMG

NPI Global Care Investments

NatWest

Department of the Environment

Exhibit E

The Global Reporting Initiative A Project of CERES

Coalition for Environmentally Responsible Economies

Welcome to the first in a series of briefings on key issues related to the Global Reporting Initiative (GRI). We hope these briefings will stimulate discussion and elicit comments from all stakeholders with an interest in standardized corporate sustainability reporting. Subsequent issues of Touchstone will cover reporting issues and trends in specific business sectors and environmental management. In addition, Touchstone will examine special topics and new frontiers in social indicators and environmental financial reporting. We invite your comments and suggestions on this and future issues.

Allen L. White and Diana M. Zinkl, Tellus Institute

GRI: The Vision - GRI's core mission is both timely and bold: To establish, through a global, voluntary, and multi-stakeholder process, the foundation for standardized (or uniform) corporate sustainability reporting worldwide. We plan to accomplish this mission by developing three tools: a set of core metrics applicable to all business enterprises; sets of sector-specific metrics customized to specific types of enterprises; and a uniform format for reporting these metrics and related information integral to a company's sustainability performance. In addition, GRI seeks to identify, or help create, a permanent institutional "home" to monitor, advocate, and continually upgrade the practice of standardized reporting worldwide. CERES launched GRI in the Fall of 1997. Founded in 1989 as a coalition of social investors and environmental organizations, CERES has spearheaded corporate environmental accountability for the last decade. This mission comprises a three-part program:

- * The CERES Principles, a 10-point code of conduct endorsed by CERES companies to help guide corporate behavior toward sustainable policies and practices.

- * The CERES Report, a comprehensive, standardized, environmental report form covering all aspects of corporate environmental management and performance. First developed in 1990 and revised annually through a collaborative industry-environmental-investor process, the CERES Report has widely recognized as leader worldwide in standardized reporting. In a 1997 UNEP/SustainAbility survey of corporate reports worldwide, half of the 10 top-ranked reports belong to CERES companies, including the top two.

- * Ongoing collaborative relationship between CERES Companies and the Coalition, helping to catalyze significant and measurable improvement toward the environmental goals embodied in the CERES Principles. The CERES process emphasizes dialogue and collaboration on both public disclosure and reporting as well as on elements of corporate culture and stakeholder engagement.

GRI flows from a decade of CERES' leadership in fostering corporate environmental

accountability through public disclosure. It seeks to build worldwide support for standardized reporting, and thereby mobilize the power of information and the marketplace to reward performance and "raise the bar" on sustainability excellence. While CERES and other initiatives have achieved notable progress, much work remains to accomplish truly universal acceptance.

The potential rewards are enormous. Global standardized reporting promises to elevate sustainability reporting to the level of financial reporting by delivering a steady flow of consistent, comparable, and verifiable information to investors, environmentalists, consumers and other stakeholders. Those behind GRI believe that the international movement that has coalesced around this objective is powerful enough to achieve major progress by the year 2000.

Where are we today?

Each year witnesses a growing number companies voluntarily disclosing environmental information, both as stand-alone corporate environmental reports (CERs) and as special environmental sections within corporate annual reports. Reporting firms cover all sectors, including manufacturing, extractive, and service. Companies from all regions of the world produce reports, including North America, Europe, Asia, Africa and Latin America. With this continuing proliferation, it is fair to assume that thousands of CERs will be produced annually by the year 2000, with representation spanning all business sectors and world regions, covering both industrialized and developing nations.

Unfortunately, while the quantity of information rapidly expands, it is far from clear that the value of information has kept pace. The reasons behind this phenomenon become evident with even a cursory look at a sample of reports. Each firm utilizes its own format, its own indicators, and its own metrics, thereby making comparisons between reports impossible. The result: the substantial resources firms spend on data development and analysis, report production, and report dissemination yield far less value than they could and should. Report users—investors, environmentalists, consumers, employees, and other stakeholders, and other firms—have great difficulty in using reports to inform investment decisions, guide consumer product choices, and benchmark performance against comparable firms. These, and many other valuable purposes remain under-served by the growing quantity of non-standardized information reported in non-uniform formats. Should present trends continue, the future of corporate sustainability reporting faces an uncertain and, probably, unfortunate future. In a "business-as-usual" scenario with each firm designing its own format, indicators, and metrics, the reporting landscape is sure to evolve in an increasingly chaotic fashion. Information quantity will continue to grow rapidly, but information value will peak, and perhaps even decline. Customized reports increasingly will frustrate, rather than satisfy, confuse rather than illuminate, the many stakeholders who take sustainability information seriously and seek to incorporate it into their decision-making. At the same time, reporting firms, already unclear as to the value of CERs to their users, may eventually retreat from disclosure as a standard business practice. This, of course, is exactly the scenario GRI seeks to avert through a concerted, global effort toward harmonization of the many disparate initiatives now underway.

Building Consensus - A survey of reporting initiatives worldwide reveals a wide array of programs sponsored by non-governmental organizations, governmental entities, and business associations. At one end of the spectrum are programs that promote reporting as a valuable practice, but offer no specific guidance on which indicators (e.g. energy efficiency, water use, air pollutants) or specific metrics (BTUs per unit product, gallons per dollar value added) should be reported. Other

programs, still voluntary, offer more specific guidance on indicators, but not metrics. Still others are mandatory, but non-prescriptive with respect to indicators or metrics. And, finally, at the other end of the spectrum, are a handful of programs, both voluntary and mandatory, that provide some combination of a uniform format, defined indicators, and standardized metrics. Among this latter group are:

- * CEFIC-the European Chemical Industry Council
- * CERES
- * Danish Government "Green Accounts" Program
- * IRRC-Investor Responsibility Research Center
- * UNEP/SustainAbility
- * VfU-the German Association for Environmental Management in Banks, Savings Banks and Insurance Companies
- * WRI-World Resources Institute

In addition to these initiatives, two notable newcomers are the World Business Council on Sustainable Development (WBCSD) Task Force on Eco-Efficiency and the Dutch government's non-binding reporting guidelines which will be issued in 1998.

The proliferation of such programs worldwide attests to the increasing mainstreaming of reporting as an essential element of corporate accountability. Accountability is no longer the exclusive domain of social investors and environmental organizations. Governments and many in the business community now actively support environmental reporting-and for some sustainability reporting-as an essential element of responsible business practice. The diversity and growth in reporting initiatives reflect this evolving convergence of NGO-business-government viewpoints.

The intense worldwide interest poses a major challenge, and opportunity, for GRI. Harnessing this burgeoning interest will require an inclusive, balanced and effective process encompassing the views and talents of all stakeholders. Moreover, achieving the GRI vision of a uniform structure and standardized core and sector-specific metrics will require stakeholders to forgo special interests for the larger goal of harmonized reporting. GRI is about finding common ground through a consensus process. It seeks to establish a foundation for reporting that will allow individual NGOs businesses, and government initiatives to go even beyond the metrics which emerge from the GRI process. At the same time, GRI believes that a uniform format and standard metrics will be powerful forces in elevating environmental reporting to the level of general acceptance and practice now accorded financial reporting.

Participants and Structure - CERES is the convenor and secretariat of GRI. Tellus Institute, an independent, non-profit organization is providing technical expertise in support of GRI activities. An international steering committee oversees GRI's activities and comprises representatives from NGOs, corporations, professional accounting organizations and the United Nations. As of April 1998, these include:

- * Association of Certified Chartered Accountants (UK)
- * Canadian Institute of Chartered Accountants (Canada)

- * Council on Economic Priorities (USA)
- * General Motors (USA)
- * Investor Responsibility Research Center (USA)
- * New Economics Foundation (UK)
- * Salomon Smith Barney (USA)
- * SustainAbility (UK)
- * Swiss Bank (Switzerland)
- * United Nations Environment Program (France)

Additional Steering Committee representation is being actively sought within Asia and newly industrializing countries. In addition to the Steering Committee, GRI associates representing various stakeholders are participating in the process. These include NGOs, professional organizations, and corporations from North America, Europe, Asia, Africa and Latin America. Although it is a voluntary, non-governmental program, GRI will involve government representatives in the process at an early stage. The Steering Committee will oversee the work of GRI Working Groups. In its initial phase three such groups have been formed: (1) User Needs -- to characterize needs of various stakeholders for environmental information and ensure that these needs are reflected in the products of other Working Groups; (2) Format -- to develop a uniform template within which information will be reported; (3) Measurement -- to identify categories of information, performance indicators and specific metrics. Other Working Groups will be phased in over the course of GRI, including Sector-Specific Metrics, Social Accountability Integration, and Institutional Arrangements. Finally, each Working Group is charged with attending to certain cross-cutting issues: North-South Implications, Implications for Small and Medium Size Enterprises, and Communications.

Schedule - GRI is scheduled to complete its work by December 1999, and will work to share the results of this effort through the year 2000. A strategy will be in place to shift ownership of the GRI process and products to a permanent institutional home capable of monitoring, refining, and promoting standardized environmental reporting over the long-term. A major international symposium is planned for 1999 as a forum for publicizing GRI's work and to set in motion the process of transitioning the GRI to a permanent institutional home.

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Exhibit F

Tellus Institute

**GREEN METRICS: A Global Status Report on
Standardized Corporate Environmental Reporting (April 1998) Excerpts**

Table 1. Reporting Guidelines Worldwide, Industry Groups

Organization	Focus	Reporting Mandatory?	Guidelines	Qualitative Metrics	Quantitative Metrics	Evaluation/ Verification/ Certification
<i>Industry Groups</i>						
The Association for Environmental Management in Banks, Savings Banks, and Insurance Companies (VfU)	Banking Industry/ Germany		X	X	X	
Business in the Environment	Generic		X			
Chemical Industry Association (VCI)*	Chemical Industry/ Germany		X			
Chemical Manufacturers Association (CMA)	Chemical Industry/US	X				
Confederation of British Industry - Environmental Business Forum	UK		X			
European Chemical Industry Council (CEFIC)	Chemical Industry		X	X	X	
International Chamber of Commerce	Generic		X			
International Network for Environmental Management			X			
Japan Federation of Economic Organizations (KEIDANREN)	Japan		X			
Minerals Council of Australia	Australia		X			X
Prince of Wales Business Leaders Forum	Generic/ International		X			
Public Environmental Reporting Initiative (PERI)	Generic		X			
World Business Council on Sustainable Development (with WEC and NRTEE)	Generic		X		X	

Guidelines available to members of VCI only.

Table 2. Reporting Guidelines Worldwide, Non-Industry Groups and Government Initiatives

Organization	Focus	Reporting Mandatory?	Guidelines	Qualitative Metrics	Quantitative Metrics	Evaluation Verification Certification
Non-Industry Groups						
Association of Chartered Certified Accountants (ACCA)	Financial Environmental Reporting		X			
Canadian Institute of Chartered Accountants	Generic		X			
Coalition for Environmentally Responsible Economies (CERES)	Generic/International	X	X	X	X	X
Eco-Management & Audit Scheme (EMAS)	Europe	X	X			X
German Institute for Standards (DIN)	Germany		X			
International Auditing Practices Committee			X			
Investor Responsibility Research Center	Generic				X	
Social Venture Network	Generic/International		X			
United Nations Environment Program (UNEP)/SustainAbility	Generic/International		X			X
United Nations Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting (UN-ISAR)	Financial Environmental Reporting		X	X	X	
World Resources Institute (WRI)	Generic		X		X	
Government Initiatives						
Advisory Committee on Business and the Environment-UK Gov't (ACBE)	Financial Environmental Reporting		X			
Denmark, "Green Accounts"	Denmark	X	X			X
Netherlands, Environmental Management Act of 1993	Netherlands	X (1998)	X*			X
New South Wales, Australia, Environment Protection Authority	New South Wales, Australia		X			

*Guidelines under development.

Table 3. Major Reporting Initiatives Worldwide, and Their Recommendations or Requirements

	CEFIC	CERES	Denmark	IRRC	UNEP/ Sustain- Ability	VFU	WBCSD (under devel.)	WRI (propose)
<i>Qualitative Information</i>								
Statement from the CEO	X				X			
Corporate environmental policy	X	X		X	X			
Company profile	X	X	X	X	X	X		
New/modified product lines	X	X						
New/modified production facilities	X	X						
Plans, objectives, goals	X	X			X	X		
Environmental management	X	X	X	X	X	X		
Audits	X	X		X	X			
Emergency preparedness	X	X			X			
Employee recognition mechanism		X		X	X			
Environmental justice activities		X						
Materials policy		X			X			
Worker health and safety	X	X			X			
Product stewardship	X	X			X	X		
Supplier relationships		X		X	X			
Noncompliance and litigation	X	X		X				
Stakeholder relations	X	X			X	X		
Contact information	X	X			X	X		
Certification process		X			X			
<i>Quantitative Information</i>								
Chemical releases	X	X	X	X	X	X	X	X
Accidents		X		X	X			X
Hazardous waste management	X	X	X	X	X	X		X
Energy use	X	X	X*	X	X	X	X	X
Water use	X	X	X*	X	X	X	X	
Non-Hazardous waste management	X	X	X	X	X	X		X
Materials use		X	X*		X	X	X	X
Non-product output					X			X
Environmental expenditures	X	X		X	X			
Normalization of metrics		X		X		X		
Plans, objectives, goals		X		X	X	X		

*Companies must report this information to the Danish government, but not for public disclosure.

Exhibit G

ISO 14001

Copyright restrictions preclude the inclusion of excerpts from ISO 14001.

Exhibit H

ISO 14031

Copyright restrictions preclude the inclusion of excerpts from ISO 14031.

If copies of these documents are desired, the reader may contact ISO (International Organization for Standardization) worldwide, or ANSI or ASTM in the US and obtain them for a fee.

Exhibit I

Investors Responsibility Research Center

IRRC Compliance Index® Trends

The table below shows the individual company trend and the trend relative to industry for every company in the non-financial S&P 500 industry groups. The size-adjusted index these trends are based upon measures the total value of penalties per \$1 million in annual revenue. ***Negative trend values indicate improvement—the company has reduced the fraction of revenue assessed as environmental penalties.*** Positive values indicate that this fraction, and by implication the company's total environmental compliance costs, have increased. A company that had no penalties in the earlier period, but has at least one in the later period will have an infinite percentage change, indicated as +∞%. A rank of "1" indicates a company with the most favorable performance relative to its industry peers. Higher numbers indicate less favorable performance.

Industry Group Company	Index Value		Percent Change in Index	Company Trend	Rank within Industry Group		Trend Relative to Industry
	1990-92	1993-95			1990-92	1993-95	
Aerospace/Defense	15.86	6.11	-61%				
Company A	1.77	0.06	-96%	improving	2	1	improving
Company B	52.71	7.19	-86%	improving	5	3	improving
Company C	8.39	9.68	+15%	worsening	3	4	worsening
Company D	0.30	11.63	+3,776%	worsening	1	5	worsening
Company E	16.11	1.98	-87%	improving	4	2	improving
Agricultural Products	2.27	22.55	+893%				
Company F	4.45	42.81	+862%	worsening	2	2	no change
Company G	0.08	2.28	+2,750%	worsening	1	1	no change
Air Freight	0.00	0.56	+∞%				
Company H	0.00	0.56	+∞%	worsening	1	1	no change
Airlines	5.57	0.70	-87%				
Company I	4.94	0.26	-94%	improving	3	2	improving
Company J	0.63	1.29	+104%	worsening	2	4	worsening
Company K	0.00	0.00	0%	no change	1	1	no change
Company L	16.70	1.23	-92%	improving	4	3	improving

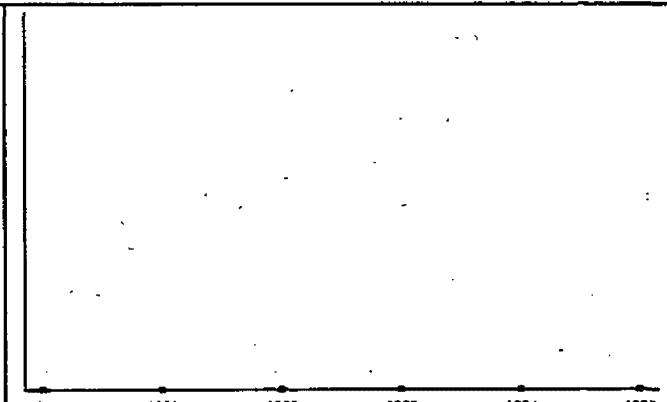
Hazardous Waste Cleanup Responsibilities

	Company Figure	Government Data	Cleanup Indices	
			Company	Industry
Superfund NPL sites:		0	NA	NA
RCRA corrective actions required:		0	NA	NA

Permit Restrictions

	Government Data	Permit Restriction Indices	
		Company	Industry
RCRA permit denials, 1993-1995:	0	NA	NA
MMS facility shut-ins, 1993-1995:	0	NA	NA

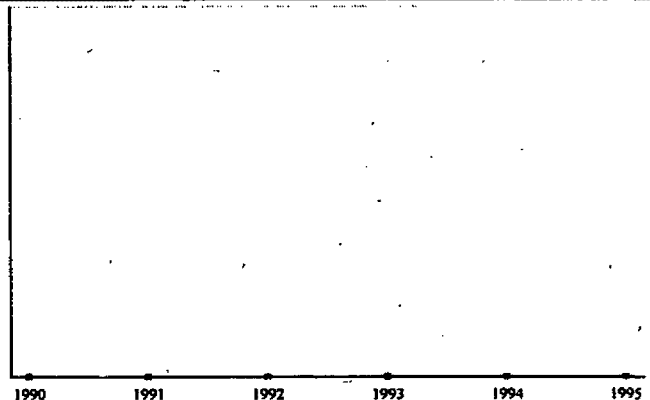
Toxic Chemicals

Toxic Chemicals		IRRC Emissions Efficiency Index®		IRRC Emissions Efficiency Index®			
	Amount (lbs.)	Company	Industry				
Transfers & releases:							
1992	780	NA	NA				
1993	784	NA	NA				
1994	1,109	NA	NA				
1995							
1996							
Total, 1992-1994:	2,673	NA	NA				
Percent change, 1989-1994:		NA	NA				
Waste generation:							
1992	780	NA	NA				
1993	77	NA	NA				
1994	1,109	NA	NA				
1995							
1996							
Total, 1992-1994:	1,966	NA	NA				
Percent change, 1991-1994:		NA	NA				

Reported Spills

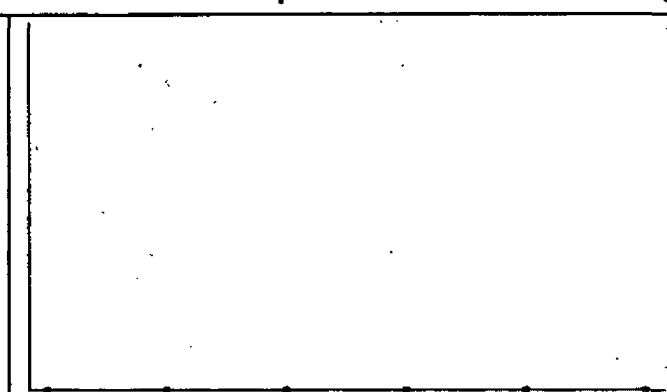
Reported Spills		IRRC Spill Index		IRRC Spill Index	
Amount	Number	Company	Industry		
Oil spills >10,000 gal.					
1993	0	0	NA	NA	
1994	0	0	NA	NA	
1995	0	0	NA	NA	
Chemical spills > 10,000 lbs.					
1993	0	0	NA	NA	
1994	0	0	NA	NA	
1995	0	0	NA	NA	
Total oil & chemical, 1993-1995:		0	NA	NA	
Percent change, 1990-1995:			NA	NA	

● company
--- industry



Year	Company	Industry
1990	NA	NA
1991	NA	NA
1992	NA	NA
1993	NA	NA
1994	NA	NA
1995	NA	NA

Compliance Data 1993-1995

Compliance Data 1993-1995			Penalty Indices		IRRC Compliance Index®	—●— company
Statute	Penalties	Total value	Company	Industry		--- industry
RCRA	0	0	NA	NA		
CAA	0	0	NA	NA		
CWA	0	0	NA	NA		
SDWA	0	0	NA	NA		
TSCA	0	0	NA	NA		
FIFRA	0	0	NA	NA		
OSHA	0	0	NA	NA		
MSHA	0	0	NA	NA		
AEA	0	0	NA	NA		
ESA	0	0	NA	NA		
Year						
1993	0	0	NA	NA		
1994	0	0	NA	NA		
1995	0	0	NA	NA		
Total, 1993-1995:	0	0	NA	NA		
Percent change, 1990-1995:			NA	NA		

Sample Bank**Banks (Money Center)****Environmental Management & Policy**

Senior officer:
Title:
Levels to CEO:
Reports to:
Env. staff:

Env. policy
Outside codes:

Evaluate environmental risks when selecting:

- ☐ Suppliers
☐ Partners
☐ Clients

Environmental Auditing & Reporting

Audits for property transactions:

Env. report:

1995 Form 10-K Environmental Disclosure

Env. capital expenditures: Actual: not disclosed
Projected: not disclosed
Env. legal proceedings: Gov't: none disclosed
Private: none disclosed

Secondary Industries**Sustainable Development Indicators**

United States Worldwide

Energy use:
Recycled material
use:

Environmental Achievements & Projects

EPA Voluntary Programs:

- ☐ WasteWiSe
☐ Green Lights
☐ Energy Star

Recycling:

Waste recycled:
Recycled material purchases:

- Asbestos abatement; Bank Plaza.
- Energy conservation.
- Waste recycling.
- Asbestos abatement.

News & Notes

Sample Bank's Global Power & Environmental Group formed a joint venture with DynaMotive Technologies Corp. to finance future power generation projects. The projects call for the design and construction of plants to produce low cost, clean burning, renewable fuel from biomass. The fuel produced is then converted into additives that destroy air emissions responsible for global warming, ozone depletion and acid rain. The estimated cost of a project is between \$15 and \$30 million. (BW 12/5/96)

The Sample Bank's Global Power & Environmental Group arranged financing for the La Compagnie Greenfield S.A. project in Europe. Sample Bank provided \$130 million to build the first waste-to-letter grade pulp de-inking and recycling pulp plant, which is scheduled to begin operation by the second quarter of 1997. (BW 7/31/96)

Exhibit J

EcoValue '21™ Uncovering Hidden Value Potential for Strategic Investors

1. Eco-Efficiency: New Source of Strategic Value Creation.

It is now increasingly widely recognised by both financial analysts and investors that there is a strong, positive, and growing correlation between industrial companies' "eco-efficiency" and their competitiveness and financial performance, whether measured as ROI, ROE, or total stock market return.¹ Indeed, recent back-test evidence indicates that a diversified portfolio of eco-efficient companies can be expected to out-perform its less efficient competitors by anywhere from 240 to 290 basis points or more per annum. In particularly high-risk sectors such as chemicals and petroleum, this "out-performance premium" can be as great as 500 basis points². What is more, this gap will only widen in future, as the forces of tighter international environmental standards, tougher disclosure requirements, and globalized competition combine to increase the financial and competitive premium on superior eco-efficiency.

Over the past 12 months, international surveys by Salomon Brothers and others have documented a dramatic increase in the degree to which major financial institutions have become concerned with environmental risk as a core business issue. And from an investment perspective, eco-efficient companies generally demonstrate superior strategic and financial management across the board, and therefore tend to produce superior financial returns. In short, eco-efficiency turns out to be an extraordinarily good proxy for and predictor of superior corporate management, which in turn generates financial out-performance and shareholder value.

What has been missing until now is a robust and credible set of analytical models capable of assessing that risk systematically, translating it into financial terms, and identifying hidden value potential and investment opportunities in individual companies. Innovest Capital Risk Advisors, S.A.

¹ See, for example, World Business Council for Sustainable Development, *Environmental Performance and Shareholder Value*, 1997; European Federation of Financial Analysts, *Eco-Efficiency and Financial Analysis: The Financial Analysts View*, 1996; ICF Kaiser, *Does Improving a Firm's Environmental Management System and Environmental Performance Result in a Higher Stock Price?* 1996; and Center for the Study of Financial Innovation, *Measuring Environmental Risk*, London: 1994. "Eco-efficiency" can be defined briefly as the capacity to create greater shareholder value with lower levels of resource inputs and environmental risk than one's corporate competitors.

² See, for example, Richard Clough, "Impact of an Environmental Screen on Portfolio Performance: A Comparative Analysis of S&P Stock Returns", Duke University, 1997; U.S. Environmental Protection Agency, "Environmentally Screened Index Investing," November, 1996; Mark A. White, "Corporate environmental Performance and Shareholder Value," University of Virginia, McIntire School of Commerce, November, 1995; Stuart L. Hart and Gautam Ahuja, "An Empirical Examination of the Relationship Between Pollution Prevention and Firm Performance," University of Michigan, School of Business Administration, September, 1994; and Jonathan Snyder, C.F.A. et al "The Performance Impact of an Environmental Screen." Winslow Management Company/Eaton Vance, 1993.

has created the EcoValue '21 J analytics platform specifically to provide that capability, for the first time in North America.

Even in the short run, sophisticated and robust eco-efficiency analytics tools such as EcoValue '21 can generate investment out-performance in the order of 240 basis points or more. In the longer term, as the capital markets become more fully sensitised to the financial and competitive consequences of eco-efficiency, the out-performance gap is expected to widen significantly. When this occurs, investment gains of 400-500 basis points and even more should become consistently achievable. The EcoValue '21 analysis platform has been created specifically to exploit the substantial hidden value potential inherent in the current lack of reliable, widely available market intelligence on the financial and investment consequences of the substantial differentials in the relative eco-efficiency - and medium-term financial performance - of publicly traded companies.

A recent Price Waterhouse study of 1,100 major U.S. manufacturing companies has revealed that over 62% had major but undisclosed environmental liabilities. Innovest Capital Risk Advisors, S.A.'s, own analytical models have detected variances as great as 500% in the environmental risk and eco-efficiency profiles of companies which conventional financial analysts and rating agencies continue to regard as identical credit and investment risks! By superimposing its proprietary analytical models on top of conventional investment screens, Innovest Capital Risk Advisors, S.A. can identify hidden value opportunities, and thereby create superior returns for investors.

EcoValue '21 J is the product of over two years' development by Innovest Capital Risk Advisors, S.A., and its strategic partners, including Coopers & Lybrand LLP. It grew directly out of insights and research generated by the initial Capital Markets Task Force of the Business Council for Sustainable Development in Geneva. The BCSD included the chairman of several of the world's leading industrial companies, including Volkswagen, DuPont, Royal Dutch/Shell, Mitsubishi, and Asea Brown Boveri, and served as the Principal Business and Industry Advisor to the Secretary General of the historic Earth Summit in Rio de Janeiro in 1992. Innovest's founder served as the head of the initial BCSD capital markets task force.

EcoValue '21's intellectual capital base has been further enriched by comprehensive, 5-year back-tests on over 300 Fortune 500 companies. These back-tests have allowed individual environmental risk factors to be identified, and their varying relative impacts on ROI, ROE, and total stock market returns to be calculated. This has greatly assisted Innovest in constructing robust models of both the financial consequences and hidden value potential inherent in environmental risk. The models have then been refined further through beta tests with Chase Manhattan Bank, Bank of America, Union Bank of Switzerland, the Zurich Insurance Group, and other leading financial companies.

2. Leveraging Hidden Value Potential:

From the standpoint of large-scale investors, one of EcoValue '21's major comparative advantages is its ability to uncover hidden value potential in major industrial companies. The source of the hidden value potential which the EcoValue '21 platform has been designed to uncover and exploit is threefold:

- a) Superior eco-efficiency turns out to be a remarkably robust - and empirically demonstrable - proxy for superior, more strategic corporate management, and therefore for superior financial performance, and shareholder value-creation.
- b) The considerable variations in eco-efficiency among competitors in the same industry sectors are currently not transparent to, or well understood by, mainstream Wall Street analysts. As a result, this value potential remains, for the present at least, almost entirely hidden.
- c) In the longer term, the out-performance potential will become even greater. As the capital markets become more fully sensitized to the financial and competitive consequences of eco-efficiency considerations, they will come to reward superior corporate performers even more heavily. Once this occurs, the out-performance gap will widen significantly, and investment performance gains of 500 basis points and even more will become achievable. It is that value potential which the EcoValue '21 platform was specifically created to uncover and exploit.

Some proponents of eco-efficiency-driven investment approaches currently claim the ability to out-perform comparable, unrestricted indices by as much as 500 basis points per annum. In the short term, Innovest Capital Risk Advisors, S.A. remains somewhat skeptical of such claims. Independent third-party back-tests do suggest, however, that investment out-performance in the order of 140 basis points is eminently achievable B even in the short term B using the EcoValue '21 J platform.

3. The Timing for EcoValue '21:

The development of the EcoValue '21 platform is particularly well-timed, coinciding as it does with a number of important, macro-level trends which considerably strengthen its ability to help generate investment out-performance:

- a) Within the U.S. capital markets themselves, recent initiatives by the Securities and Exchange Commission, the Federal Deposit and Insurance Corporation, and the accounting profession all herald an era of much greater environmental performance disclosure and scrutiny by financial regulators. The SEC's Staff Accounting Bulletin 92 and the newly-promulgated rules on environmental liability disclosure by the American Institute of Certified Public Accountants are only two important examples. These and other recent developments will dramatically increase the visibility of environmental business risks for industrial corporations and their bankers and shareholders, and therefore the growing financial premium placed on superior eco-efficiency.
- b) The formation of the U.S. Environmental Bankers Association, which includes such leading financial institutions as Chase Manhattan Bank, Bank of America, and Nations Bank, also underscores the growing interest of America's banking sector in understanding and managing environmental risks and opportunities. Awareness of the financial consequences of environmental risk is currently at an all-time high, but there remains a dearth of sophisticated analytical tools and models with which to manage and leverage it.
- c) At the same time, major U.S. industrial corporations are also demonstrating an unprecedented interest in improved environmental performance information and analysis. The Public Environmental Reporting Initiative (PERI) consortium was formed for that specific purpose, and includes some of America's leading manufacturing companies, including Amoco, IBM, DuPont, Dow Chemical, Rockwell, and United Technologies. In addition, trends toward improved corporate waste tracking and greater public disclosure of corporate environmental performance

will also serve to increase the financial and competitive importance of eco-efficiency.

- d) Internationally, tougher environmental legislation and enforcement and competitive pressures are all placing an ever-higher premium on corporations' environmental performance throughout the industrialized world. These trends, led by the European Community, Scandinavia, and Japan, will dramatically increase investors' need for accurate information and analysis. The growing impact of the ISO 14000 environmental quality standards from the International Standards Organization will tighten the links between environmental performance, international competitiveness, and profitability even further.
- e) In 1995 and 1996, over seventy of the world's leading private sector banks and insurance companies have, for the first time, signed formal United Nations declarations committing themselves to improving their environmental performance and that of their major industrial customers. This too will increase both the visibility and the financial significance of eco-efficiency.
- f) In 1996 and 1997, several new investment vehicles were created by major institutional investors in Europe, predicated on translating superior eco-efficiency into financial out-performance. These new funds, and their inevitable imitators in North America and Asia, will significantly accelerate demand for EcoValue '21's proprietary data and analysis.
- g) In the emerging markets of the industrializing world, the major multilateral lending agencies (World Bank, IFC, Asian Development Bank, EBRD etc.) are also placing a much stronger emphasis on the environmental performance of the major projects and companies to which they direct tens of billions of dollars in financing. Predictably, this new attitude on the part of the funders is also reinforcing the financial importance of eco-efficiency.
- h) The financial and competitive impact of the recent Kyoto Protocol is likely to be enormous. Once ratified, the Kyoto agreements will mandate cuts in the U.S. greenhouse gas emissions of as much as 35% below business-as-usual scenarios. The potential financial impact on the U.S. electric utility sector alone has been independently estimated to exceed \$60 billion per year. Policy developments such as this one clearly increase the demand for analytical tools such as EcoValue '21 which can help investors identify superior performers and hidden value.

These developments, both singly and in combination, have created a growing demand for research and analysis capable of identifying both the risks and opportunities created by the world-wide drive towards eco-efficiency. The EcoValue '21 analytics platform is a direct response to that growing need.

4. Comparative Advantages of the EcoValue '21 Analytics Platform:

In identifying superior investment opportunities, Innovest's proprietary EcoValue '21 J analytical models create at least three powerful comparative advantages:

- a) **Superior Algorithms and Predictive Power:** EcoValue '21J's analytical model includes both quantitative and qualitative analysis, using over twenty leading indicators as proxies for companies' capacity to manage environmental risk profitably into the future. In addition, EcoValue '21J's extensive back-testing allows the varying financial consequences of the different environmental risk factors to be modeled and weighted

individually. Perhaps most important of all, the EcoValue '21J models are able to differentiate, correlate and prioritize the varying financial consequences of different environmental risk factors. These features give EcoValue '21J a level of predictive power, sophistication, and robustness unmatched by any other instrument currently available. In the longer term, the out-performance potential will become even greater. As the capital markets become more sensitized and better informed about eco-efficiency considerations, they will come to reward superior corporate performers and penalize laggards far more heavily than is the case today. Once this occurs, the out-performance gap will widen even further, and gains of 400-500 basis points or more will become achievable.

- b) **Proprietary Data Bases:** EcoValue '21J's proprietary data bases have been synthesized from more than 20 authoritative sources, including specialized data bases from the U.S. Environmental Protection Agency, the Department of Energy, and the Bureau of Census. They also include detailed analyses of each company's capacity to manage environmental risks profitably, successfully and strategically into the future. Taken together, EcoValue '21's proprietary data bases are arguably the largest and most robust of their kind in North America.
- c) **Unique Value-Added Analysis:** The entire field of environmental finance is a relatively new one, and the world supply of professionals qualified to conduct sophisticated analysis of both financial and environmental factors is extremely limited. The EcoValue '21J analysis team comprises senior alumni of such prestigious Wall Street Investment houses as Salomon Brothers, Nomura Securities, and Chase Manhattan Bank who are also experienced environmental risk analysts. In addition, the research team is supported by the Environmental Services Group at Coopers & Lybrand LLP, which has a wealth of both domestic and international experience in environmental due diligence, environmental cost accounting, and environmental litigation support. Finally, the EcoValue '21J models have been beta tested with some of the leading financial companies in the world, including Chase Manhattan Bank, the Union Bank of Switzerland, and the AIG Insurance Group.

5. The Analytical Model:

At the heart of Innovest's analytical model is the attempt to balance the level of environmental and eco-efficiency risk with the companies' managerial and financial capacity to manage that risk successfully into the future. Risk alone is only half the equation; what is crucially important to investors is how well that risk is likely to be managed. On the risk side of the equation, the models address three fundamental types and sources of environmental risk factors:

Historical Contingent Liabilities:

- Superfund
- State and hazardous waste sites
- RCRA
- Toxic torts

Operating Risk Exposures:

- Toxic emissions
- Product risk liabilities

- Hazardous waste disposal
- Waste discharges
- Supply chain management risk

Eco-Efficiency and Sustainability Risk:

- Energy intensity and efficiency
- Raw materials and natural resource use efficiency and intensity
- Product life-cycle durability and recyclability
- Exposure to consumer values shifts

Potentially offsetting these three categories of risk in the rating model are two other critical factors:

a) The Company's financial and managerial capacity to manage environmental risk efficiency:

Financial:

- Balance sheet strength
- Insurance cover adequacy

Managerial:

- Strategic corporate governance capability
- Environmental management systems strength
- Environmental audit/accounting capacity
- Supply chain management
- Training capacity and intensity
- Generic environmental management protocols (ISO 14000, EMAS, ICC Charter)
- Industry-specific protocols (Responsible Care, UNEP banking and insurance declarations)

b) The Company's capacity to position itself strategically to profit from environmentally-driven opportunities.

Exhibit K

Environmental Information Services

Background

EIS researches and writes detailed environmental reports on Fortune 500 corporations and industries which it markets to major corporations, financial firms, law firms, and consulting & engineering firms.

Products

EIS writes in depth (50-100 pages) reports on major companies and industries which provide a complete track record of their environmental performance and policies, including:

- Environmental management and policies.
- Auditing and reporting practices
- Environmental expenditures
- Remediation liabilities
- Superfund site liabilities
- Toxic waste releases
- hazardous waste generation
- Compliance history including violations and assessed penalties.
- Spills and accidental releases
- Detailed environmental contact information at the corporate, business unit and site levels.

The information is taken from 12 major EPA databases, over 200 industry newspapers and journals, corporate SEC filings (Annual Reports and Form 10-Ks), various corporate directories, and EIS research. Much time and effort is devoted to accurately linking each piece of environmental data to the responsible company.

EIS offers three environmental data products as follows:

Company reports focus on an individual corporation, and in 30 to 120 pages, they provide:

- Environmental policies and expenditures (see p. 7).
- Corporate level data (see p. 4).
- Site level data (see p. 5).
- State-by-state description of significant environmental events, as reported in the media (see p. 6).
- Detailed description of each Superfund site and RCRA hazardous waste site the company has been identified as a responsible party at.
- Listing of company sites, including address, contact person, phone, number of employees, and SIC code.

Industry reports focus on the largest companies within an industry and in 50 to 100 pages, provide:

- Company-to-company comparisons of environmental performance indicators (see p. 3) with an industry average included.
- Environmental policies and expenditures for each company included in the industry report (see p. 7).

Brief environmental performance profiles give the reader an overview of the company and industry environmental performance through using four key indicators (see p. 8).

EIS has prepared 91 company reports and 9 industry reports which it updates annually. It has prepared 200 brief environmental profiles which will be updated as needed.

EIS provides the following three services:

- In addition to corporate-wide summary data, it provides in depth, site level descriptions of key events.
- It provides very timely information because it takes under a year to research and write reports.
- It does custom research projects to meet it's clients' specific needs quickly and reliably.

Applicability to the Financial Community

EIS reports can provide financial managers with an in depth view of the environmental liabilities of major corporations and industries. This data is often not reported on a company's Form 10-K SEC filing and thus provides a fuller view of their actual exposure. In addition, EIS reports provide:

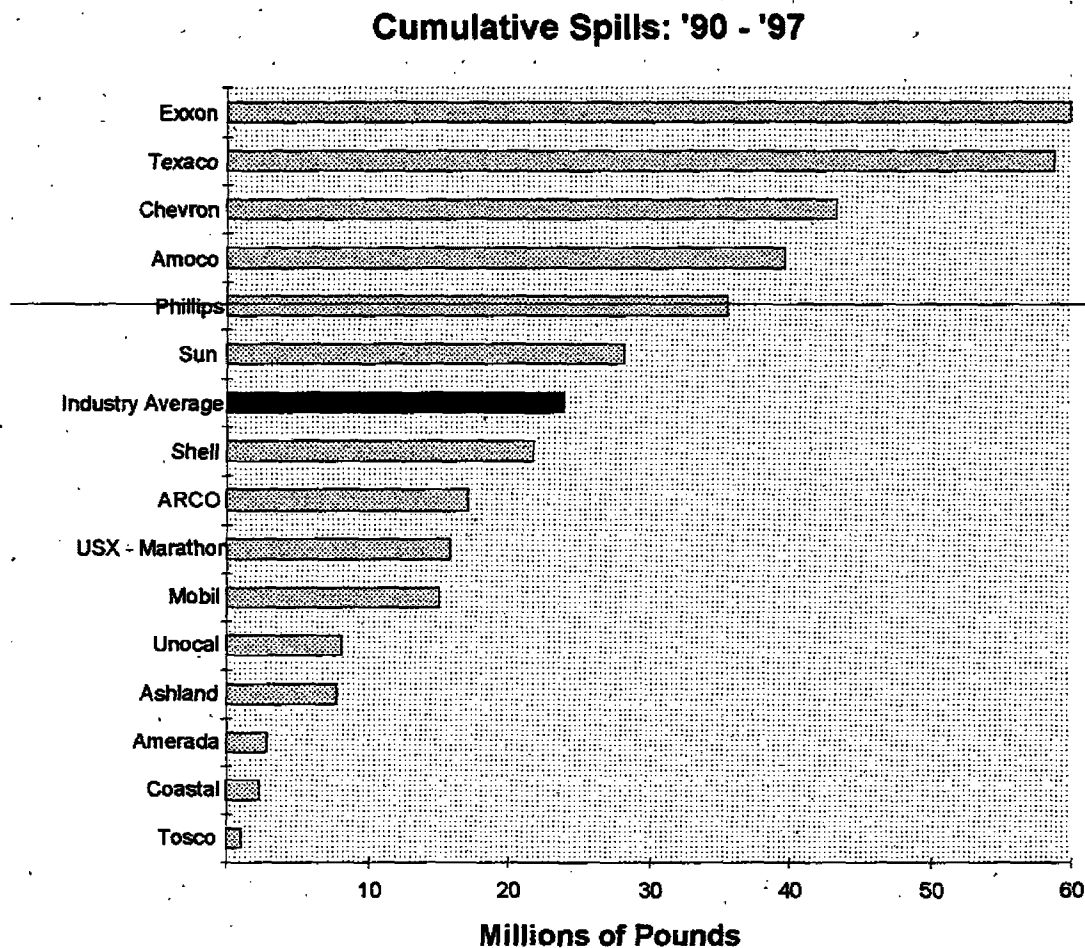
- Five year trend data that lets you evaluate environmental performance over time.
- Normalized figures based on revenues which helps you compare data quickly between large and small companies.
- Corporate environmental policies which reveal priorities and management structure.
- Industry comparisons which put individual company performance in perspective.
- Site-level information gives you accurate compliance and enforcement data.
- State-by-state information summarize significant environmental events as reported in the media.

The following section consists of excerpts from several EIS reports and is meant to give the reader a better understanding of EIS' services.

INDUSTRY LEVEL ENVIRONMENTAL DATA

Spills and Accidental Releases

The following graph shows the cumulative total major spills (spills exceeding 1,000 pounds) from 1990 through 1997.



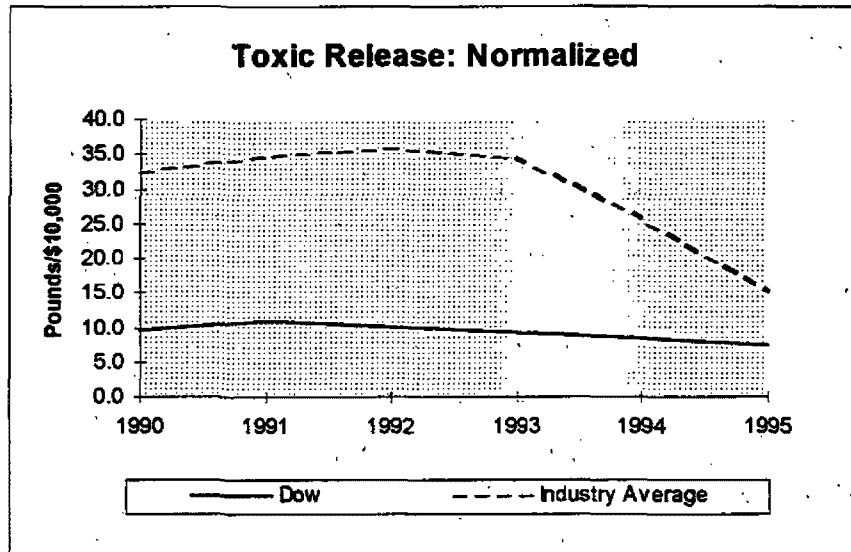
Source: U.S. EPA, Emergency Response Notification System.

This section is 20 pages in the actual report and includes detailed information (both raw and normalized data) on:

- *toxic releases*
- *hazardous waste generation*
- *violations & penalties*
- *Superfund sites*

CORPORATE LEVEL ENVIRONMENTAL DATA**Toxic Waste Management**

The graph and table that follow show the amount of toxic wastes that were released annually from 1990 through 1995 for ABC Company and the industry average. During the research of this report, 1995 were the latest available data. The data are normalized using worldwide revenues to adjust for any potential distortion because of a company's size.



Source: U.S. EPA, Toxic Release Inventory.

Pounds of Toxic Wastes Released For Every \$10,000 Sales

	1990	1991	1992	1993	1994	1995	Average
Dow	9.67	11.01	10.14	9.23	8.48	7.48	9.71
Industry Average	32.43	34.91	35.91	34.51	25.86	14.97	29.76

Source: U.S. Environmental Protection Agency, Toxic Release Inventory.

This section continues for 10 more pages in the actual report and includes detailed information (both raw and normalized data) on:

- *hazardous waste generation*
- *violations & penalties*
- *spills*
- *Superfund sites*

SITE LEVEL ENVIRONMENTAL DATA

Air Permit Enforcement Actions

The following table shows ABC's air permit enforcement actions and penalties from 1990 through 1997. This information is sorted by state, city, plant name and then date. Repetitive plant name, address, city, state, and date information has been omitted for ease of reading.

Air Permit Enforcement Actions

PLANT NAME	CITY	ST	SIC	ACTION	DATE	PENALTY
EXXON RESIN FINISHNG	BATON ROUGE	LA	2821	EPA COURT CONSENT DECREE	6/15/95	\$152,000
EXXON COMPANY USA	BATON ROUGE	LA	2911	STATE ADMIN. ORDER	8/21/90	
				STATE ADMIN. ORDER	8/21/90	
				STATE ADMIN. ORDER	5/9/91	\$17,100
				STATE NOV ISSUED	3/23/92	
				113D APO COMPLAINT FILED	9/30/94	\$133,000
				113D PENALTY COLLECTED	10/10/95	\$36,000
				EPA COURT CONSENT DECREE	10/9/96	
				STATE ADMIN. ORDER	1/10/97	
EXXON CHEM COMPANY	BATON ROUGE	LA	2821	STATE ADMIN. ORDER	8/21/90	
				STATE NOV ISSUED	10/25/94	
EXXON/GARDEN CITY PT	MORGAN CITY	LA	1389	STATE ADMIN. ORDER	5/7/90	
				STATE ADMIN. ORDER	4/2/91	\$170,000
EXXON COMPANY USA	PORT ALLEN	LA	1321	STATE ADMIN. ORDER	8/21/90	
EXXON CO USA	BILLINGS	MT	2911	STATE NOV ISSUED	11/18/93	
				STATE NOV ISSUED	10/7/94	
				STATE NONCOMPLIANCE PENAL	10/31/95	\$5,000
EXXON COMPANY USA	GREENSBORO	NC	5171	STATE NOV ISSUED	6/22/95	
EXXON COMPANY U S A	BAYONNE	NJ	7011	STATE ADMIN. ORDER	12/13/91	\$45,000
EXXON CORPORATION	LINDEN	NJ	5171	STATE ADMIN. ORDER	12/19/90	\$3,000
				STATE ADMIN. ORDER	1/3/91	\$71,000
EXXON CHEM AMERICAS/BAYWAY	LINDEN	NJ	2911	STATE ADMIN. ORDER	4/28/95	\$4,000
				STATE NOV ISSUED	7/9/97	
				STATE NOV ISSUED	7/14/97	
EXXON CORPORATION	LINDEN	NJ	2869	STATE ADMIN. ORDER	5/8/92	\$3,000
BAYWAY REFINING CO.	LINDEN	NJ	5171	EPA NOV ISSUED	8/30/93	
				113D APO COMPLAINT FILED	9/29/93	\$61,000
				STATE ADMIN. ORDER	11/5/93	\$4,000
				STATE ADMIN. ORDER	5/13/96	\$4,000
EXXON NEVILLE ISLAND TERMI	PITTSBURGH	PA	5171	STATE ADMIN. ORDER	7/26/90	
				EPA NOV ISSUED	9/14/94	
EXXON COMPANY USA	BAYTOWN	TX	2911	STATE NOV ISSUED	2/27/90	
				STATE ADMIN. ORDER	6/22/90	\$10,000
				STATE NOV ISSUED	9/1/90	
				STATE ADMIN. ORDER	10/25/91	\$6,000
				STATE ADMIN. ORDER	2/21/92	\$5,000
				STATE NOV ISSUED	12/9/92	
				STATE ADMIN. ORDER	8/23/95	\$39,000
				STATE NOV ISSUED	7/31/96	

Source: U.S. Environmental Protection Agency, Aerometric Information Retrieval System.

This section continues for 13 more pages in the actual report and includes site level data on:

- *Water permit enforcement actions*
- *Hazardous waste management*
- *Oil and chemical spills*
- *Superfund sites*

SIGNIFICANT ENVIRONMENTAL HEALTH & SAFETY EVENTS

DELAWARE

Wilmington, Delaware Sand and Gravel Superfund Site

Superfund Site Cleanup

ABC, General Motors, and Chrysler agreed to pay much of the \$40 million cleanup expenses at the Delaware Sand and Gravel Superfund site near Wilmington, EPA announced April 18, 1995. Contaminants at the site included benzene, arsenic, and other carcinogens. The defendants committed to cleaning contaminated soil using vapor extraction technology.

Wilmington

Proposed Penalty, False Claim On Label; FIFRA

On October 7, 1994, ABC's Wilmington, Delaware facility was issued an administrative civil action under The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) for violations involving false claim on label (Docket# 95-H-02F) with a proposed penalty of \$1,895,000.

In March 28, 1991, the same facility was issued an administrative civil action under FIFRA, with a proposed penalty of \$2,405,000. The final order was issued on September 29, 1994 with a final penalty of \$1,097,200.

Penalty, Unregistered Use of Advertised Pesticide; FIFRA

On October 16, 1990, ABC's Wilmington, Delaware facility was issued an administrative civil action under Federal Insecticide, Fungicide, And Rodenticide Act for violations involving unregistered use of advertised pesticide (Docket# 411-F) with a proposed penalty of \$10,000. The final order was issued on May 21, 1991 with a final penalty of \$10,000.

This section continues 15 more pages in the actual report.

ENVIRONMENTAL MANAGEMENT & POLICY

Environmental Expenditures

Worldwide Expenditures (millions of dollars)	1997	1996	1995	1994
Total Capital Expenditures	10,178	9,200	9,000	7,800
Capitalized Environmental Expenditures	480	457	565	603
Percentage Environmental	5%	5%	6%	8%

ABC reserves funds each year for estimated site restoration costs (to be incurred at the end of the operating life of certain facilities and properties) and environmental liabilities. The company's total, long-term liabilities accumulated at the end of 1997 were \$2.6 billion, including charges made against income of: 1997-\$146 million, 1996-\$215 million, and 1995-\$160 million.

Corporate Environmental Policy

The following is ABC's official published environmental policy:

It is ABC's policy to conduct its business in a manner that is compatible with the balanced environmental and economic needs of the communities in which it operates. Further, it is the Corporation's policy to comply with all applicable environmental laws and regulations and apply responsible standards where laws or regulations do not exist. The Corporation is committed to continuous efforts to improve environmental performance throughout its activities. It will encourage concern and respect for the environment, emphasize every employee's responsibility in environmental performance, and ensure appropriate operating practices and training. The Corporation will communicate with the public on environmental matters and share its experience with others to facilitate improvements in industry performance.

This section continues for 2 more pages in the actual report and includes:

- *Environmental codes of conduct*
- *Environmental auditing & reporting*
- *Other corporate environmental policies*

BRIEF ENVIRONMENTAL PROFILES

Specialty Chemical Industry

Company	Toxic Waste		Hazardous Waste		Spills		Enforcement		Overall Score
	Index	Score	Index	Score	Index	Score	Index	Score	
Ecolab	78	2	0.01	2	17	8	5.63	8	5.00
Ethyl	4,436	7	5.41	9	0	3	3.96	4	5.75
Goodrich (B F)	4,936	9	1.26	4	25	10	5.68	9	8.00
Grace (W R)	1,489	4	0.39	3	12	7	1.49	2	4.00
Great Lakes Chemical	13,710	12	3.47	7	10	6	4.07	5	7.50
Hercules	8,808	11	4.92	8	61	11	8.89	11	10.25
Intl Flavors & Fragrances	2,621	5	3.12	6	1	4	2.32	3	4.50
Lubrizol	2,953	6	9.54	12	0	2	11.51	12	8.00
Morton International	4,584	8	5.74	10	4	5	4.67	6	7.25
Nalco Chemical	1,260	3	2.52	5	19	9	5.11	7	6.00
OM Group	0	1	0.00	1	0	1	.00	1	1.00
Sigma-Aldrich	5,483	10	5.92	11	135	12	5.72	10	10.75
Industry Average	4,196		3.53		24		4.92		6.50
Weightings: Toxic Waste 25% Hazardous Waste 25% Spills 25% Enforcement 25% Total 100%									
Statistics: Median: 6.63 Average: 6.50									

EIS prepared brief environmental performance profiles on over 200 major corporations. Four indicators were analyzed using EPA data as follows:

Toxic Waste: Toxic Release Inventory

The average of the annual total releases and off-site transfers in pounds per million dollars of sales.

Hazardous Waste: Biennial Reporting System

The average of the annual total RCRA waste generated at Federally permitted facilities, in tons per million dollars of sales. Does not include wastewater.

Spills: Emergency Response Notification System

The average of the annual total spills, in pounds per million dollars of sales.

Enforcement

The total number of enforcement actions per 10 billion dollars in sales.

The companies are arranged according to industry in the front of the report and then alphabetically in the back. The industry sheets compare the companies to each other and an industry average. They score each company's performance for the four indicators and overall. The overall score is based on adjustable weightings for each indicator.

Exhibit L

UNCOVERING VALUE: THE LINKS BETWEEN ENVIRONMENTAL & FINANCIAL PERFORMANCE

A Luncheon Series at the NYSSA March 5, March 19, March 26, April 2 1998

Co-Chairs:

Lisa Leff, CFA, Smith Barney Asset Management

Kathy O'Connor, CFA, Towneley Capital

Christopher Rowe, Vantage Global Advisors

Until recently, both corporate and financial analysts have tended to view corporate environmental spending purely as a liability. More specifically, this traditional view has valued the financial impact of environmental programs almost exclusively by measuring the negative risks associated with non-compliance with EPA and state environmental regulations.

Yet, intuitively, it makes sense that there exists a positive link between environmental and financial performance. Environmental efficiency essentially means using fewer resources and generating less waste in the production of goods and services — in other words, simple economic efficiency.

Recognizing this link, many corporations are now going “beyond compliance” and making environmental concerns a cornerstone of their business policy. Companies in a variety of industries have made significant commitments to environmental performance, by adopting environmental management systems, resource conservation and waste minimization programs, product stewardship initiatives, and enhanced reporting to shareholders. The challenge for Wall Street is to identify and analyze both the immediate and long term financial implications of these types of corporate environmental investments. This series of talks is designed to foster dialogue between the corporate and analytical communities around these increasingly important issues, with the goal of collaboratively uncovering and measuring the financial value of strong corporate environmental performance.

About the Social Investment Security Analysts Group (SISA)

The Social Investment Security Analysts (SISA) is a group of investment professionals collaborating to increase awareness and advance the level of dialogue in assessing the financial value of progressive corporate practices. SISA's was formed as a direct extension of our need as investment professionals to serve a growing base of clients concerned about the social and environmental impact of corporate policies. Specifically, SISA's goals are to:

- ◆ Educate investment professionals about emerging issues in corporate social and environmental responsibility.
- ◆ Raise the level of awareness within the investment community about the value of progressive corporate practices.
- ◆ Provide opportunities for dialogue between corporate management and the investment

community on how progressive business practices impact corporate growth and profitability.

- ◆ Support investment practitioners responding to needs of institutional and individual social investment clients.
- ◆ Create systems to measure and value corporate policies that impact workers, the environment and communities.

To join SISA, or for more information, please contact Rosalie Poss at NYSSA.

AGENDA

Master of Ceremonies for the series:

Linda Descano, Vice President, Environmental Affairs Salomon Smith Barney Inc.

**March 5 MINIMIZING ENVIRONMENTAL IMPACT,
MAXIMIZING EFFICIENCY AND COST CONTROL
FEATURED COMPANY: PITNEY BOWES**

Michael J. Critelli, Chairman and CEO, Pitney Bowes

**March 19 INCREASING SHAREHOLDER VALUE THROUGH
STRATEGIC ENVIRONMENTAL INITIATIVES IN THE
CHEMICAL INDUSTRY
FEATURED COMPANY: DUPONT**

Gary Pfeiffer, Senior Vice President and Chief Financial Officer, E.I. duPont de Nemours

Dick Doyle, Vice President, Responsible Care, Chemical Manufacturers Association

James H. Wilbur, Managing Director and Chemical Analyst, Salomon Smith Barney

**March 26 CREATING BUSINESS OPPORTUNITIES THROUGH
ENVIRONMENTAL LEADERSHIP: SUSTAINABLE DESIGN AND
THE BUILDING INDUSTRY
FEATURED COMPANY: INTERFACE**

Ray C. Anderson, Chairman and Chief Executive Officer, Interface, Inc. and Co-chair,
President's Council on Sustainable Development

William A. McDonough, FAIA, Founding Principal, William McDonough + Partners and
Dean, University of Virginia School of Architecture

**April 2 THE ENERGY CONNECTION: ENVIRONMENTAL
MANAGEMENT AND EFFICIENCY AT WORK
FEATURED COMPANY: SUN CO.**

Robert H. Campbell, Chairman, CEO and President, Sun Company, Inc.

Robert Massie, Executive Director, Coalition for Environmentally Responsible Economies

Exhibit M
ASPEN INSTITUTE DIALOGUE ON
VALUING ENVIRONMENTAL PERFORMANCE

BUSINESS PLAN

The Opportunity

The Aspen Institute has convened two planning meetings involving representatives of leading corporations and financial institutions, who identified largely unrealized opportunities for both corporations and financial institutions.

For corporations, there is an opportunity to increase their economic value by improving their environmental management and performance and by more effectively communicating their actions to financial institutions. For financial institutions, more relevant environmental communication will enable credit, investment, and insurance decision-makers to more effectively use this information in their valuations and assessments.

This improved communication should lead to lower cost of capital and insurance premiums and more prized stock for leading corporations, and to an incentive for others to adopt improved environmental management.

The participants in the two initial meetings posited several assumptions:

- ◆ that data collected by Yale University, Business in the Environment, World Business Council for Sustainable Development and others show that the strategic business value of enhanced environmental management and performance is not fully recognized in financial analysis;
- ◆ that there is often a "green wall" inhibiting the flow of information between corporate environmental and financial officers;
- ◆ that corporate environmental management and financial analysts tend to focus on the downside, i.e. avoiding non-compliance and reducing risk, rather than on the upside potential for enhancing strategic value;
- ◆ that corporate communication of good environmental performance is frequently not framed in terms useful to financial analysts;
- ◆ that national and international progress toward environmental goals will be more rapid and more efficient if markets are driving voluntary positive performance;
- ◆ that sound environmental management is indicative of a management culture that is also likely to be reflected in other areas, including community relations, employment diversity, and worker satisfaction, and that the combined effect of this culture may be a significant indicator of corporate value; and
- ◆ that more and more individual and institutional investors are concerned about the environmental and other societal implications of their investments and are likely to demand better ways to differentiate among companies on this basis.

The Project

The participants have proposed a dialogue to be conducted during the next twelve months under the auspices of the Aspen Institute and using the Aspen approach — candid, not-for-attribution discussions among people with diverse perspectives. It will consist of periodic,

professionally facilitated, one-day meetings held in New York by a group of 25 individuals. The group will be chosen primarily from corporate environmental and financial officials and from financial institutions such as commercial banks, investment firms, institutional investors, insurance and reinsurance companies, and rating agencies; and to a lesser extent from individuals with relevant experience in federal and state government, academia, and environmental organizations.

A document or report will be created by the group during this process as a means of communicating the group's conclusions and recommendations to corporate managers, financial institutions, and other audiences, and a communications or marketing plan will be proposed to maximize the dissemination and adoption of the group's recommendations.

The ultimate goal will be to help corporate management incorporate this value in their decision making, and to communicate it effectively to financial institutions. This will assist financial institutions to further the integration of these factors into credit, investment and underwriting decisions. This in turn will help environmentally strong corporations realize the full economic value of their environmental actions, and inspire less strong corporations to improve their environmental management and performance.

The Process

Meetings will be held in New York approximately every two months, normally in the facilities of participating organizations. Non-members of the group may be invited to attend on a one-time basis to present research results or case studies relevant to the group's objective.

The development of a report will be the organizing tool for the initial meetings. Volunteers from the group, assisted by Aspen Institute staff, will draft proposals or suggested texts in advance of meetings and prepare draft summaries of the discussions and conclusions after the fact. Starting with three draft statements of opportunities and barriers -- what they hope to accomplish -- being developed independently by a few corporate, financial, and government/NGO representatives for the first meeting, the group will identify the framework of the report and will capture areas of consensus in a format useful for communicating with the target audiences: first, senior corporate management, and secondarily, financial analysts and public policy makers.

In the later stages of developing the report, a marketing plan will be developed to ensure the broadest possible dissemination of the conclusions and recommendations. Participants will be active players in this outreach effort and will be asked to seek opportunities for presentations within their professional circles. In addition, other means of effecting change will be explored.

The report will be printed under the auspices of the Aspen Institute, and while it will reflect the combined views of the participants, individual participants will not be asked to endorse its exact wording or to commit their organizations to it.

Participants

Approximately 25 participants will be selected to represent the following perspectives:

Corporate (8-10): environmental managers, investor relations or other financial managers, strategic planners.

Financial (8-10): investment firms, commercial banks, insurance and reinsurance

companies, institutional investors, accounting firms.

Other (4-6): government, environmental groups, academics.

The Aspen Institute

The Aspen Institute is a not-for-profit educational organization dedicated to enhancing the quality of leadership through informed dialogue. Its policy programs frame the choices that democratic societies face by providing an impartial and nonpartisan forum for dialogue. It convenes men and women who represent diverse viewpoints and backgrounds with a view to informing their decisions and enhancing their effectiveness.

EXHIBIT N

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