Finding Common Ground on the Metrics that Matter

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NAEM is a professional association representing the interests of the environmental, health, safety (EHS), and sustainability profession, and serves as a highly regarded voice of the EHS professional. See www.naem.org for further information.

Executive Summary

Investors and companies are both increasingly interested in sustainability issues. These issues typically revolve around environmental and social factors that have real but potentially long-term or contingent impacts on corporate financial value. This, in turn, makes traditional accounting metrics less valuable in assessing sustainability issues than in analysis of many other business issues. Therefore, both investors and companies – as well as groups that service or monitor and regulate them – have a growing interest in receiving meaningful corporate environmental, social, and governance (ESG) information on an ongoing basis. Despite this shared interest, investors often complain about the difficulty of gathering and truly understanding corporate ESG data, while company representatives may express concerns about "survey fatigue," or the amount of time and resources it takes to supply the requested data to various investors and ESG research firms.

This report explores and documents the extent to which corporate ESG information tracked and managed internally by companies is consistent with analogous information sought by external parties, and in particular, by ESG investors and the research companies that serve them. To conduct our analysis, we obtained corporate data from the results of a recent "Green Metrics that Matter" survey conducted by the National Association for Environmental Management (NAEM), and developed ESG researcher/investor data by collecting and compiling publicly available information from company web sites and other sources. We supplemented the empirical data provided to or developed by us with interviews with knowledgeable representatives of some of the companies represented in the corporate survey and of the ESG research/investment firms. We believe that the resulting database is the most thorough, representative, and sophisticated collection of information on the interface between corporate sustainability measurement efforts and investor-focused external evaluation assembled to date.

Major Findings

1. **There is general agreement about the key corporate sustainability issues, but not necessarily on the specific form and number of metrics used to measure them. There is also a fundamental difference in the purpose(s) to be served by examining corporate ESG information between corporate executives and ESG researchers/investors.**

   - Increasingly, corporate managers and ESG researchers/investors believe that the same ESG issues are important, but may track them at very different levels of detail.
   - Corporate ESG metrics and approaches to managing to them are based on business fundamentals (e.g., benefits/costs, importance to customers, possibility of impact).
   - Disclosure of the ESG metrics of common interest is very uneven, with some being disclosed by a great many companies and others disclosed by very few.
   - ESG researchers are concerned both with corporate accountability and with predicting the future, and their information requests and collection methods reflect the need to both receive appropriate assurances and to inform a judgment about the management quality of companies.

2. **Both ESG researchers/ investors and corporate EHS managers and executives approach ESG issues from a risk mitigation perspective, not a value creation perspective.**

   - Most specific indicators used by corporate EHS managers and executives and investors focus on identifying negative attributes or downside risk.
   - While the members of both groups are interested in the potential for ESG-related financial value creation, their interactions are generally devoid of information speaking directly to this crucial issue.

3. **Future improvements in corporate disclosure quality and in efficient and adroit collection and use of these data in investment analysis will require improved clarity and more effective and consistent communication between companies, researchers, and the consumers of information.**

   - Substantial, non-incremental progress depends on clear articulation, from both companies and ESG researchers/investors, of corporate financial value creation through advancements in managing ESG issues and their results.
   - Typical ESG metrics reporting practices and guidelines have advanced, but also have had some unintended and unfortunate consequences, including too few companies reporting, and some researchers requesting a substantial number of additional (non-GRI) metrics. These adverse outcomes often reinforce one another. More widespread and consistent disclosure on fewer indicators might create more utility for both corporations and investors.
   - Greater dialog and sharing of information and perspectives is essential for both sides to understand the other's needs and constraints, and to forge communication mechanisms that are more effective and less burdensome than current practices.

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Section 1: Introduction

Corporate sustainability activity has been growing significantly in recent years, with a number of major corporations embracing such practices in efforts to alleviate concerns about their actions relating to the environment, address public concerns about particular business practices, and continue to thrive financially. In parallel, the past two decades have witnessed dramatic growth in the practice of socially responsible investing (SRI), and more recently, of "mainstream" investors considering ESG factors, as well as a proliferation of data, ratings, rankings, and other products and services that provide assessments of corporate ESG behavior. These two parallel paths have recently begun to intersect more often, most frequently when ESG researchers and investors seek information from companies on their ESG policies, practices, and performance. Although such interactions often are respectful and productive, there is a growing sense that they could be more useful and less time-consuming if they were guided by a shared sense of what ESG issues are truly important to both internal corporate decision makers and external ESG researchers and evaluators than exists at present.

Study Objectives

This report explores and documents the extent to which corporate environmental, social, and governance (ESG) information tracked and managed internally by companies is consistent with analogous information sought by external parties, and in particular, by ESG investors and the research companies that serve them.

We conducted this study to document the ESG issues that are important to both constituencies, map the extent of overlap and commonality, and identify any important disparities. More specifically, our research and analysis effort addressed three major objectives:

1. Identify the ESG issues and metrics that are meaningful to both corporate senior managers and ESG researchers/raters.
2. Identify areas of mismatch between corporate and ESG research data needs, and document, as available data allow, why these differences exist.
3. Develop a working concept of whether there is room to move more towards alignment and consensus to reduce this gap or

As detailed in this report, despite substantial differences in information needs and perspectives, there is considerable overlap in the types of ESG information that is valued and tracked by leading corporations and ESG researchers and investors. Moreover, companies increasingly are developing and reporting data of a scope and relevance that is directly responsive to the needs of investors and other stakeholders. With that said, companies also track significant numbers of metrics that they either do not disclose or provide only on request. This suggests that at least some firms could reduce whatever reporting burden exists by proactively reporting more of the internal ESG metrics that are likely to be valued by investors and research providers. Looking at the other side of the relationship, most ESG researchers collect an extensive set of ESG variables on very large numbers of companies, and each has a somewhat unique formulation of which issues are most important and how, in the aggregate, they inform a judgment about a particular company's sustainability (or lack thereof).

In evaluating these data, however, all really are reaching a judgment about the quality of management in the firm, and using that judgment as the basis (or an important component) of a decision to include a company on an index, rate/rank it highly, and/or invest in its securities. In very few cases, if any, is it clear which specific ESG attributes are most important in evaluating management quality, and therefore, which ESG data are most critical for companies to disclose. Also absent from both the queries posed to companies regarding their ESG posture and

performance and from the vast majority of corporate sustainability disclosures is any clear linkages or relationship between a company's position and accomplishments and the determinants of financial value (e.g. creation of incremental cash flows, reduction in risk). Accordingly, some additional transparency is warranted from both sides if further progress is to be made in promoting more sustainable business practices, disclosure, and more effective investing by investors seeking to include sustainability factors. To the extent that the linkages needed to truly understand which ESG issues are most important to preserving and creating corporate financial value remain to be determined or are unclear, both corporate executives and ESG researchers/investors have important work to do in establishing this understanding.

One other important finding emerges from our analysis, on a more limited, logistical level. Both corporate EHS professionals and ESG researchers believe that the GRI reporting framework and guidelines have been very helpful in defining a consistent framework and approach to sustainability reporting. They also agree, however, that as currently constituted, the guidelines contain too many indicators, some of which are of questionable relevance to many U.S. companies, and that preparing a report fully responsive to the GRI reporting guidelines is burdensome and time-consuming. Representatives of both communities would like the number of metrics to be reduced to a more manageable number (some have suggested 20 or so, but there is not yet consensus on a precise number).

A Guide to the Study

In observing the relationship between corporations and ESG researchers as distinct groups, an inherent logic emerges. Companies exist to pursue their business ends—creating goods and services, delivering them to customers and clients, and generating profit for their owners (investors). Since the beginning of the concept of for-profit activity, those running businesses have sought to "do a better job"—whether as a statement of quality, efficiency, or financial success. In the most recent era, many have introduced ESG/sustainability issues into the effort to, and internal evaluation of, "doing a better job."

In this world, those operating around the company have a vested interest in the attributes of the companies and in their effects—these are the stakeholders. Some are direct stakeholders—investors, communities, employees, etc., and some are indirect stakeholders working on behalf of the direct stakeholders. This latter group includes ESG researchers and raters.

In this study, we explore the state of play of two groups, as well as the relationship between the two. In Section 2 we present some background and context. We begin our analysis in earnest in Section 3 by documenting commonly used corporate ESG metrics, the thought process that has informed the selection and use of such metrics, and the types of experiences that corporate representatives have had in interacting with members of the ESG research community. In Section 4, we present an analysis of the metrics and approach used in a variety of well-known ESG ratings and other evaluation methods, followed by some perspective provided by several of the developers of these methods. Our analysis of these two groups allows us to explore in greater detail the relationship between them, particularly the specifics of their mutual or differential interests in ESG metrics.

Finally, mapping the commonalities and differences between companies and ESG raters is a necessary precursor to exploring where there might be opportunities for constructive change. We present this mapping in Section 5. Section 6 brings into clear relief our analysis of the opportunities for improvement by both companies and ESG researchers, as well as for more

extensive collaboration between the groups on the robust application of sustainability metrics to help drive better performance—along both sustainability and financial performance dimensions. This report also includes two attached appendices. Appendix A describes our data collection and analysis methods, and Appendix B provides additional information on the ESG research and rating organizations are part of the focus of this study.

To develop the facts and analysis presented in this report, we pursued two parallel paths, one focusing on the corporate EHS/sustainability management perspective, and the other on the ESG researcher/investor perspective. We compiled and analyzed data to determine what ESG issues are of active interest and how the information supplied by populating the resulting specific metrics is used, for either internal management purposes (in corporations) or evaluation, rating/ranking, and ultimately investment portfolio construction (in ESG research/investment firms). In the case of the corporations, we were able to obtain and use an extensive database of survey results developed by the National Association for Environmental Management (NAEM), as discussed further below. This database contained detailed information from 72 firms, which is a sizeable fraction of the total number of medium to large U.S. companies disclosing any meaningful EHS or ESG information. In the case of the ESG researchers, we collected publicly data on 14 distinct ESG ratings and investment firms, a sample that comprises the vast majority of the major investment-oriented ESG ratings schemes being actively used in North American markets. In both cases, we supplemented the empirical data provided to or developed by us with interviews with knowledgeable representatives of some of the companies represented in the NAEM survey and the ESG research/investment firms. Corporate interviews included discussions with representatives of firms in several very different industries, and those with ESG researchers included senior managers/analysts from ESG researchers and investors spanning a wide range of approaches and philosophies. We believe that, in the aggregate, this resulted in the largest and most representative information base addressing the U.S. corporate EHS management and investment-driven ESG evaluation perspectives (and their interactions) ever assembled.

Section 2: Framing the Issue: Background and Context

There is a strong and growing interest on the part of many people and organizations in the environmental, health and safety, social, and governance practices and performance of corporations. There are many societal, as well as financial, drivers of this trend. These include a general expectation by members of the public that companies will operate ethically and exhibit sound governance practices, and will be forthcoming both about their activities that affect society and any adverse impacts that they create. Recent increases in the power and spread of information technology also fuel the expectation that information on corporate behavior and performance should and will be available in real time on an ongoing basis. As government entities reach the natural limits of their ability to compel or promote changes in corporate practices as well as address more recent political and economic challenges to their continuing regulatory roles, civil society, through environmental, advocacy, and governance-oriented organizations, as well as other non-governmental organizations (NGOs) have stepped into the resulting void. These organizations have aggressively asserted that corporations should or must recognize their importance and respond to their demands for greater transparency and information disclosure.

At the same time, corporate practices continue to evolve, with many very large and sophisticated companies adopting new paradigms that recognize the importance of environmental and social issues, increasingly under the rubric of corporate social responsibility (CSR) or sustainability. Many of these firms are now imposing their own expectations of continuing environmental, health and safety, and social performance improvement and adequate governance practices on their suppliers and other value chain participants.

In parallel with, and to some extent accelerating, these trends has been the steady growth of Socially Responsible Investment (SRI), which in recent years has increasingly broadened its focus to consider a wide array of environmental, social, and governance (ESG) issues. ESG investing is expanding at a rapid rate both in the U.S. and in other advanced economies, and is growing far more rapidly than traditional "mainstream" investing (SIF Foundation, 2010). At the same time, sustainability issues are increasingly considered by "mainstream" investors. Indeed, there are a number of multi-lateral initiatives and much market behavior oriented toward mainstreaming ESG investing approaches into investment analysis and decision making throughout our capital markets. This expansion of interest in ESG considerations has provided rising demand for information that is needed to evaluate the ESG posture and performance of particular industries and of the individual companies within them. Responding to this need is a relatively small but well-established ESG research community that regularly collects company-level data and develops and sells a variety of data sets, company ratings and/or rankings, screening tools, interactive web site subscriptions, and other related products and services. Some of these research firms collect their information solely from publicly available sources while others attempt to establish and maintain ongoing communication with companies. Even in the case of the former, there is generally at least some interaction between researchers and firm representatives, if only to review and correct, as appropriate, any data or judgments that are viewed as out of date or inaccurate. Moreover, with the recent and anticipated further growth of interest in use of ESG factors in investing, it is likely that these interactions will increase in intensity and frequency in the years ahead.

The scope of ESG research is uniformly broad, and arguably, deep as well. Most ESG researchers examine entire markets and multiple geographies. According to their web sites and publicly available documents, most major ESG researchers routinely or continuously evaluate 3,000 to 5,000

companies and may provide more limited coverage of as many as 7,000. Virtually all publicly traded mid-cap to large-cap firms in the U.S. and in many other countries typically are included. This means that any publicly traded U.S. company of any substantial size is included in the research population developed by most ESG researchers. To build baseline information on companies, most ESG researchers (as well as ESG investors that develop their own data) collect publicly available company data. Some limit their data gathering to this step. Many, however, supplement this information with accounts presented in the news media, input from labor unions and/or NGOs, trade or industry associations, and/or think tanks. Many also seek direct interaction with the companies that they evaluate. This may occur through administration of a survey or questionnaire or take the form of an interview or structured dialog. With a few exceptions, the range of issues of interest to these entities includes multiple ESG areas (e.g., health and safety, the environment, corporate governance), though the specific emphasis and indicators used to evaluate each may vary. Generally, ESG researchers collect and evaluate information on several dozen and as many as several hundred distinct ESG indicators, from which they develop scores, ratings, and other analytical results.

The growing interest in corporate ESG posture and performance has led to parallel increases in the numbers of requests that are made of firms for information in these subject matter domains. In some cases, these requests are not accompanied by clear explanations of how the information will be used and for what purpose. Moreover, the increasingly multidimensional nature of the issues of interest to ESG researchers (and their investor clients) means that responding fully to some of these information requests may require the involvement of a number of people in different organizational functions within a given company. This makes providing a substantive response time consuming, logistically challenging, and costly. This increasing complexity, coupled with a perceived lack of transparency on the part of many of the organizations that have been soliciting corporate ESG information in recent years, has led to a certain amount of frustration within many companies. Company representatives may feel that at least some information requests that they receive are duplicative and also may be somewhat unfocused and even misguided.

In addition to the associated "survey fatigue," company representatives often claim that they are working on sustainability initiatives that are material to their operations but that many external parties requesting information ask instead for other information that is not material to the companies' operations. Conversely, ESG researchers often feel that the roadblock to better analysis is the lack of disclosure by companies.

In sum, there may be a mismatch along several relevant dimensions between what ESG information companies claim they are developing and using and the information requested by external parties. One immediate indicator is that ESG firms typically request a far greater number of ESG metrics than the number commonly used by companies—often an order of magnitude more.

With that said, there is little existing documentation on the presence of this perceived mismatch or why it might exist. If corporate executives that track multiple ESG variables for internal use are adequately managing and effectively addressing ESG issues, the question arises: why do ESG researchers actively solicit or otherwise collect very large volumes of data that are not viewed as important by senior corporate managers? Conversely, if corporate senior executives are adequately tracking and managing indicators of sustainable business performance, why are they not more attentive to all of the issues that have been identified (indirectly, through their ESG research providers) by investors and other important financial community stakeholders? Several possibilities exist:

- Different fundamental purposes (e.g., internal accountability vs. potential stock price outperformance)
- Different materiality thresholds (e.g., climate change risk might have low materiality in the view of a company's senior management but higher materiality for an investment portfolio manager)
- Non-financial interests of ESG research firms, even when servicing investors (e.g., a belief in the need for a reduction in pollution levels to well below legally permitted amounts)
- Mismatched return on investment (ROI) horizons for companies and investors
- Some portion of the information set requested by ESG firms may be "common knowledge" of corporate management and therefore not actively tracked, and
- New issues are emerging and one group is further ahead than the other in following these issues.

Our objective in undertaking this project was to map more closely the overlap and gaps between what companies believe is material, as indicated by their actions, and what ESG research firms indicate is material when requesting company disclosure, as indicated by their public descriptions of their ratings.

Another important related question is how either or both of these constituencies diverges from the commonly accepted standard for disclosure of corporate sustainability data, the Global Reporting Initiative (GRI). Our task, however, involves more than simply evaluating the relationship between ESG research efforts or internal company metrics and GRI's indicators. While GRI was created through a multi-stakeholder process that included representatives of both publicly traded corporations and investors, the final result does not document where specific requests for metrics originated. Nor does it document what any particular stakeholder group (including companies themselves) view as material information. It is important to recognize that GRI's multi-stakeholder process incorporated a number of groups and interests that were not focused on financial performance from either the company or investor perspective. One goal of our effort was therefore to create a public mapping of investor interests and company interests to the GRI framework, showing where there are mismatches between the data required by both interest groups, and the reporting elements of the GRI.

Section 3: Corporate Use of Sustainability Metrics

Corporate management relies on the flow of information to make decisions. From this basic premise flows the oft-quoted maxim "what gets measured gets managed." For those interested in sustainability issues, an understanding of which sustainability information makes it into management processes is key. To begin, we turn to the results of a recent survey conducted by the National Association for Environmental Management (NAEM), an important contributor to this study. All of the data presented in Exhibits in this section are derived from the results of this survey, which are described in greater depth in a recent NAEM report (NAEM, 2011).

Corporate Use of Sustainability Metrics

The objective of NAEM's "Green Metrics that Matter" research was to identify the EHS and sustainability metrics that companies track, and determine why. The survey instrument consisted of two major components. In the first, respondents were asked to indicate which specific metrics they track within six major subject areas.[1] The second component solicited information on company interactions with ESG researchers. Most of the metrics used in the NAEM survey addressed familiar EHS issues, though several examined broader social issues and other ESG concerns. In the results presented below, we use the term "E&S metrics" to indicate that the scope of the issues covered extends beyond the boundaries of traditional corporate EHS management. Although it is likely that the firms surveyed may track other ESG issues, those metrics were not included in the NAEM survey. Such metrics may include important governance, financial, and economic aspects that, as discussed below, are of great interest to many ESG researchers and investors and are commonly included in the term "ESG."

Which EHS-related sustainability metrics do companies track?

Within each subject area of the first component of the NAEM survey, respondents were asked whether they tracked any of these pre-defined, commonly used metrics, and to add any that they use that were not listed. In addition, respondents were asked, for each metric tracked, a) whether they had established a performance target, b) the primary use of the information developed through using the metric, c) the global scope of the data collected for the metric, d) how high in the organization the collected data are reported, and e) whether and under what conditions the data are made public.

Exhibit 1
Typical Numbers of E&S Metrics Tracked by NAEM Survey Respondent Companies (N=72)

Subject Area (number of metrics)	Median	Maximum
Resource Consumption (6)	4	7
Resource Conservation/Recovery (10)	6	10
Emissions / Waste (9)	6	10
Health & Safety (7)	5	8
Compliance (8)	7	9
Management-Oriented (19)	10	19
Total (59)	**37**	**57**

Minimum value for all Subject Areas = 0
Source: NAEM, 2011.

Exhibit 1 provides summary statistics from the NAEM survey. As shown in Exhibit 1, the central tendency of the distributions of these data shows that for each subject area, the typical respondent firm tracks half or more of the metrics listed in the survey instrument. Most respondent firms track metrics across all of the general

[1] These subject areas included resource use (six metrics), resource conservation and recovery (10 metrics), emissions and waste (nine metrics), health and safety (seven metrics), compliance (eight metrics), and

subject areas addressed in the survey using several different metrics. That is, a typical respondent company tracks approximately 37 metrics, including four measures of resource consumption, five or six measures of resource conservation and emissions/waste, five metrics evaluating health and safety, six or seven measures of compliance, and approximately ten management-oriented metrics evaluating programmatic or stakeholder issues. With that said, at one end of the range, a few firms track only a handful of E&S metrics while some firms track as many as twice the number of metrics as is typical within particular subject areas, and on an overall basis, several track 40 or more metrics, with a handful tracking more than 50. We examine the specific metrics tracked by most companies in greater depth below.

The same general pattern holds when we consider the numbers of performance targets established for E&S metrics, except that the numbers are about half as large, more or less across the board. Responding companies typically have established two or three targets for each of the six major subject areas addressed in the survey, though there are firms that have considerably more. Companies may not establish performance targets for the EHS/sustainability metrics they track for a variety of reasons. In some cases, a metric is binary (e.g., in or out of compliance) and/or changes infrequently, so defining a target may be viewed as superfluous. In others, company senior management may be exploring an issue and not yet be ready to define and manage to a particular performance level. And in still others, a target may be considered redundant with or subsidiary to that associated with some other metric. Despite these and other factors, target setting for the metrics tracked by survey respondent companies is quite common.

At the individual metric level, several indicators are in widespread use within the NAEM survey population, as shown in Exhibit 2. This table shows, within each subject area, the specific EHS/sustainability metrics that are tracked internally by a majority of survey respondents. These include familiar measures of resource use and conservation, such as energy and water; regulated EHS issues and activities such as hazardous waste management, pollutant emissions, and health and safety; indicators of ongoing regulatory compliance, interactions with regulatory agency personnel and other stakeholders, and excursions beyond stipulated limits or normal operating conditions; and a variety of indicators speaking to either the extent of deployment of new management initiatives or their results, and broader EHS and social results that may be of interest to external stakeholders. In each subject area, a clear majority of the metrics listed in the NAEM survey instrument are tracked by more than half of the responding companies, and for several subject areas, all but one of these pre-defined metrics are tracked by a majority of respondent firms. Moreover, all of the 59 metrics listed in the survey are tracked by at least some respondents.

Exhibit 2
E&S Metrics Tracked by Half or More of NAEM Survey Respondent Companies (N=72)

Subject Area (number of metrics)	Number of Metrics Tracked	Metrics
Resource Consumption (6)	4	Electricity, Energy (all sources), Water, Energy (renewable Sources)
Resource Conservation/Recovery (10)	6	Electricity, Energy, Water, Paper, Metals, Plastic
Emissions / Waste (9)	7	Hazardous Waste, Greenhouse Gases, Non-Hazardous Waste, TRI Emissions (total), Water Pollutants, Nitrogen Oxides, Sulfur Oxides
Health & Safety (7)	6	Injuries and Fatalities, Lost Day Injuries, Recordable Injuries, Near-Misses, Driving Safety Incidents, Unsafe Exposures
Compliance (8)	7	Fines and Penalties, Notices of Violation, Air and Wastewater (Permit) Exceedances, Spills and Releases, Environmental Remediation Costs, Lawsuits or other Legal Actions, Consent Orders
Management-Oriented (19)	11	Programs Audited and/or Findings, Philanthropy/Charitable Causes, Employee Training, Employee Diversity, EHS Management Systems, Community Investment, Volunteerism, Supplier Diversity, Supply Chain Performance, Product Compliance with Customer Requirements, Product Innovation or Sustainability-Related Services

Source: NAEM, 2011.

How are metrics used inside companies?
The choices made available to NAEM survey respondents in this regard are shown in the adjacent box.[2]

Primary Use of EHS Metrics/Information-Definitions

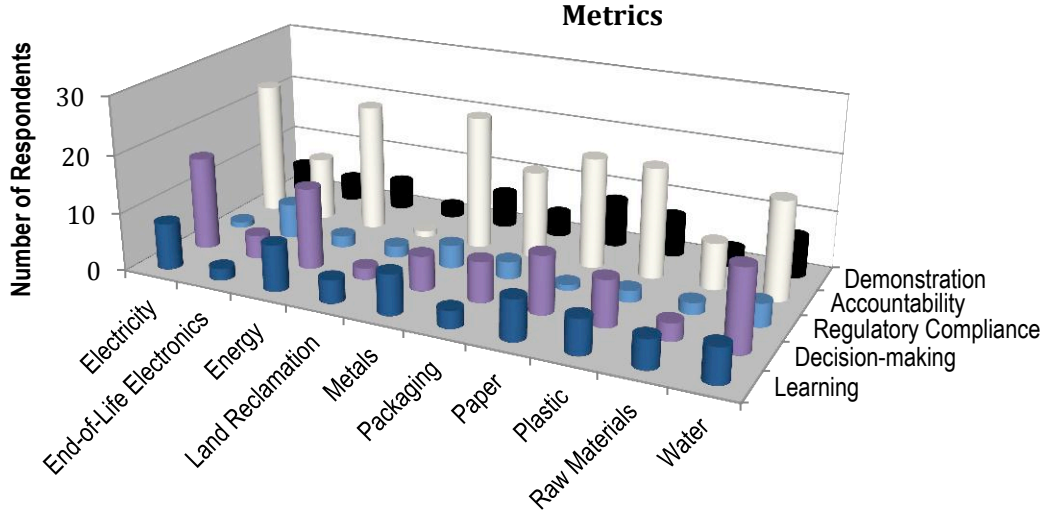
- Learning-enable understanding and/or insights that may be applied to produce future performance improvements
- Decision-Making-produce quantitative data needed to inform one or more business decisions
- Regulatory Compliance-required by regulation, permit conditions, or order
- Other Accountability Purposes-yield performance results needed to evaluate success and/or progress of programs, initiatives, capital investments, procedures, and/or personnel; also to provide data needed to satisfy expectations of external stakeholders, and
- Demonstration-produce results needed to evaluate feasibility, cost-effectiveness, or other business criteria and/or to provide assurance to internal or external stakeholders of completion or some other aspect(s) of effectiveness.

Exhibit 3 provides an illustrative example of a pattern observed across most of the subject areas examined in the NAEM survey. This chart shows the primary use of the information collected through use of metrics in the resource conservation/ recovery subject area. It is clear that the dominant uses within the sample of companies responding to the NAEM survey are for 1) *accountability* and 2) *decision-making*; this pattern is especially strong for some of the resources that are tracked and managed most widely, such as energy, electricity,

[2] The survey respondents were limited to one (and only one) primary choice on managerial use of the data, so that they would be induced to indicate the single most important use for each metric, recognizing that many such metrics can (and often do) serve multiple purposes.

and water. Interestingly, for some of the other inputs, particularly those that are widely recycled (e.g., metals, paper, plastics, and packaging), *accountability* is an even more dominant use, while *decision making, learning*, and *demonstration* are much more equivalent in terms of how frequently they are cited as the principal use for the information. Overall, the patterns observed here are not surprising given that resource consumption/recovery generally is not subject to regulation and that energy and materials conserved or recovered provide cost savings (or new revenue streams). In further review of the NAEM survey data, however, we can observe the same pattern for many of the other types of E&S metrics considered in the survey. The picture that emerges from reviewing this and many other similar sets of results is that within the sample of companies responding to the NAEM survey, E&S data are being used in a variety of ways in a managerial sense; that is, to operate the business effectively and efficiently.

Exhibit 3
Illustrative Example: Primary Use of Resource Conservation/Recovery Metrics



Source: NAEM, 2011.

Which, if any, E&S metrics are presented to senior management?

Exhibit 4 provides some perspective on what types of metrics are being reported to senior management in respondent companies. As shown in this table, typical respondent firms are reporting about 18 E&S metrics all the way up the management chain, though some report two or three times this many. Moreover, these E&S metrics cut across all of the six major subject areas examined in the survey. Thus, the senior executives within most respondent firms are receiving at least a few key indicators across a relatively broad span of E&S topics. Generally, three or so metrics are reported for each major subject area, though again, some receive two to three times that number across all six subject areas. The typical respondent company reports five management-oriented metrics to senior management, with some firms reporting as many as 17. Finally, though not common by any means, some firms do not report any metrics in particular subject areas to the C-suite, a pattern that holds across all six of the major topics addressed in the survey.

In one of the more intriguing findings that emerge from the NAEM survey results, it is clear that a substantial number of EHS and broader sustainability metrics (and presumably, performance against them over time) are being reported to the highest levels of the firm. In other words, E&S performance is being reported to, and presumably scrutinized by, C-level executives and/or the Board of Directors at numerous companies in the majority of firms represented in the NAEM survey. More generally, the data presented in Exhibit 4 also show that the idea advanced by some management theorists that senior corporate executives should demand that their subordinates condense complex information to only a few key indicators has not taken hold in the management of E&S issues. To the contrary, it appears that within the typical respondent firm, senior management receives input on nearly 20 distinct E&S indicators on an ongoing basis. Interestingly, each of the six subject areas addressed in the NAEM survey appears to receive proportional or equivalent senior management attention. That is, in a typical respondent firm, two or three key metrics are provided to senior decision makers addressing "core" EHS issues such as emissions and compliance, as well as a handful of more management-oriented metrics that, as discussed in more detail below, speak to the effectiveness of internal E&S and broader management processes and practices.

Exhibit 4
Typical Numbers of E&S Metrics Received by Senior Management in NAEM Survey Respondent Companies (N=72)

Subject Area (number of metrics)	Median	Maximum
Resource Consumption (6)	3	6
Resource Conservation/Recovery (10)	2	10
Emissions / Waste (9)	2	9
Health & Safety (7)	3	7
Compliance (8)	3	8
Management-Oriented (19)	5	17
Total (59)	**18**	**56**

Note: Minimum Value for All Subject Areas=0.
Source: NAEM, 2011.

The fact that non-trivial amounts of data are being reported up the management chain at many companies (at least within this sample of leadership companies) prompts the question of what specific metrics are being evaluated and for what purpose. In Exhibit 5, we list all of the E&S metrics that are reported to senior management (as defined above) at more than half of all the companies responding to the NAEM survey. As shown in this table, energy and water use and energy conservation are major items of interest to corporate leaders. Similarly, emissions of greenhouse gases are reported to the senior management of nearly three in four respondent companies, far more than any other category of emissions or waste. Health and safety and regulatory compliance results also appear to be of interest to corporate senior executives, particularly those specific performance results that are reported to regulatory agencies and/or could provoke significant stakeholder concerns. Finally, in terms of the EHS management-oriented metrics used in NAEM survey companies, the issue most frequently reported to senior management is audit results (again, a compliance/assurance orientation), while those addressing social issue performance include two readily quantified metrics that are important to certain stakeholder constituencies: philanthropy and employee diversity. Taken as a whole, these results suggest that the senior executives within most respondent companies are monitoring recent and ongoing performance, that is, executing an assurance function. These results do not suggest, on the whole, that these senior executives are using E&S metrics to explore or evaluate (e.g., for decision making purposes) alternatives to current practices or for identifying and pursuing new opportunities. With that said, it is possible, given the limitations of the survey method employed, that other opportunity-focused metrics are indeed being developed and used for management decision making within the surveyed firms. In such cases, it is likely that such metrics are developed and used by corporate managers outside of the EHS function that was the focus of the NAEM survey.

The data presented in Exhibit 5 do suggest, however, that scrutiny is being applied to a substantial array of meaningful sustainability endpoints by the most senior executives (and Board members) within a majority of firms responding to the NAEM survey. Note that for each of the fourteen metrics listed, the reporting chain extends all the way to the C-suite much more often than it is limited to the senior management of a subsidiary or division. This finding suggests that in addition to climate change, other ESG issues are now less commonly viewed as tactical matters that are best delegated to site-level or divisional management, rather than being managed comprehensively, and even strategically, at the corporate level.

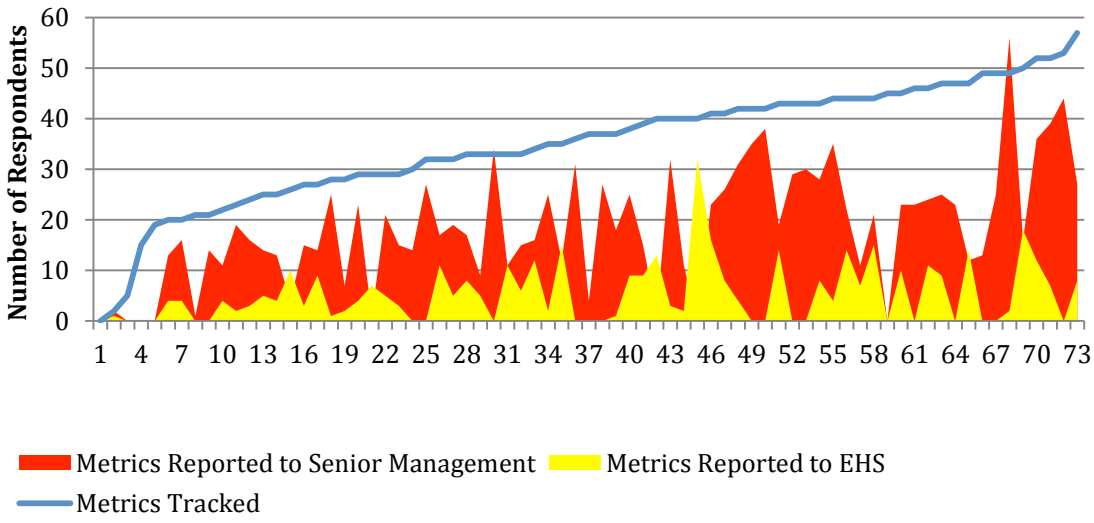
Exhibit 5
E&S Metrics Most Commonly Reported to NAEM Survey Respondent Company Senior Management

Category	Metric	Highest Level Reported to:			Total as Percent of All Respondents
		Subsidiary Senior Mgt.	CEO/ Board	Total	
Resource Consumption	Energy (all sources)	8	48	56	78%
	Electricity	6	37	43	60%
	Water	3	36	39	54%
Resource Conservation/Recycling	Energy	2	35	37	51%
Emissions and Waste Management	Greenhouse Gases/Carbon Footprint	5	48	53	74%
Health and Safety Performance	Injuries and Fatalities	3	51	54	75%
	Lost Day Injuries	4	48	52	72%
	More than Onsite First Aid Injuries	2	39	41	57%
Compliance Performance	Fines and Penalties	6	36	42	58%
	Notices of Violation (NOVs)	6	33	39	54%
	Remediation Costs (FIN 47/Sarbanes-Oxley Compliance)	4	32	36	50%
Management and Governance	Philanthropy/Charitable Causes	3	41	44	61%
	EHS Programs Audited/Findings	11	26	37	51%
	Employee Diversity	5	32	37	51%

Source: NAEM, 2011.

Apart from these overall summary-level findings, there is great diversity across companies in the degree to which the data obtained through deployment of E&S metrics are reported up the management chain within the NAEM survey population. Exhibit 6 provides company-level data showing the total number of E&S metrics used, how many of these metrics are reported no further than the head of the corporate EHS function, and how many are reported to senior management (the CEO/Board level or the senior management of the relevant company subsidiary). As noted above, the total number of E&S metrics used by respondent companies varies considerably, from only a few to nearly 60, with a central tendency of 30 to 40. At the same time, and more or less irrespective of how many total metrics are used, it is frequently the case that most of the information is reported all the way up the management chain to either the leadership of a subsidiary or to the "C-suite." Generally, it appears that the majority of the information (two-thirds or more) developed through deployment of the metrics tracked is reported to this level.

Exhibit 6*
NAEM Survey Responses-Internal Reporting of E&S Metrics



* We note here that in a few cases, the data suggest that a greater number of metrics are reported to senior management than are tracked by the firm, a seemingly nonsensical result. This is due to a few respondents skipping or not accurately entering responses for certain portions of multi-part survey questions, while responding to others. While acknowledging this data problem, we have not made any adjustments or corrections to the data reported, and report them as received.
Source: NAEM, 2011.

Notwithstanding the seemingly limited extent to which the information developed through EHS/sustainability metrics is being used to identify and pursue new product and service opportunities, the NAEM survey results do indicate that senior executives within more than a few respondent companies are beginning to look at EHS and broader sustainability issues a bit more strategically. Exhibit 7 provides results for an array of what might be considered leading indicators, or at least metrics that address in some way company activities or performance that might yield efficiency improvements, cost savings, new or improved products or services, reduced operational and financial risks, or other outcomes that are more central to operating a business than more traditional indicators of regulatory compliance or a reduced environmental footprint. Three of these metrics are tracked by more than three of four respondent companies, twelve are tracked by approximately 30-60 percent of these firms, and two are tracked by less than 20 percent of respondents. These metrics include indicators of progress toward implementing management practices that can lead to future business and sustainability performance improvements as well as other metrics that speak directly to a performance result that should be (and presumably is) addressed by the firm's existing EHS program. Examples of the former include the extent of deployment of formal EHS management systems, and investments in sustainability-related research and development and in capital improvements, while examples of the latter include two important non-regulated health and safety metrics (unsafe exposures and off-the-job injuries), and stakeholder engagement. Interestingly, these forward-looking metrics include a substantial number that may not routinely be tracked by corporate EHS staff—these are highlighted in yellow in Exhibit 7.

Exhibit 7 Use of E&S "Leading Indicator" Metrics	
Metric	**Percent of All Respondents**
Employee Training	79%
EHS Management Systems	77%
Near-Misses	77%
Driving Safety Incidents	59%
Unsafe Exposures	51%
Supply Chain Performance	49%
Investments in EHS/Sustainability-Related Capital Improvements	42%
Investments in Renewable/Alternative Energy	41%
Product Compliance with Customer Requirements	41%
Product Innovations or Sustainability-Related Service	39%
Stakeholder Engagement	37%
VPP or Equal Site Status	37%
Savings from EHS Improvements	34%
Ergonomics Projects/Initiatives	34%
Sustainability-Related R&D	28%
Customer/Consumer Education	20%
Off-the-Job Injuries	10%
Source: NAEM, 2011.	

How much public disclosure and reporting is occurring?

Finally, responses to the NAEM survey indicate that most companies publicly report or voluntarily disclose results for some, though not all, of the E&S metrics they track. Overall, nearly two-thirds of the 72 respondents to the NAEM survey report or voluntarily disclose half or more of their E&S metrics.

To put this result into context, we reproduce here some summary findings from a previous examination of corporate ESG disclosure (2008 data). Although this study was limited in scope to EHS metrics, it did offer a more comprehensive look at corporate disclosure because it included the members of the Russell 1000 index, the U.S. firms with the largest market capitalization (Soyka and Bateman, 2009).

- Although 27 percent of Russell 1000 firms disclosed their direct GHG emissions, only about 16 percent had a corporate climate change policy, and only 60 percent of these firms made clear that it applied to all company operations and employees.
- Only eleven percent of firms disclosed their annual energy costs, and about seven percent disclosed their total water use and/or cost.
- Only about 13 percent published a corporate environmental, CSR, or sustainability report.

Even allowing for substantial growth in environmental disclosure over the past three years, corporate disclosure of key ESG metrics, to the extent that it occurs at all, is likely to be quite limited in most companies. This finding is substantiated by considering the number of U.S.

corporations that prepare and issue GRI reports. As of the 2010 reporting year, 164 U.S. organizations had issued GRI reports, suggesting adoption rates of 15 percent or less among U.S. publicly traded companies.

Returning to the NAEM survey data, as shown in Exhibit 8, about 40 percent of these companies disclose all of their results for the resource consumption and emissions/waste subject areas, and 30 percent provide all of their information on resource conservation and recovery; in all more than half of respondents provide information on at least half of their metrics in these three subject areas. In the remaining three subject areas (health and safety, compliance, and management-oriented), about 40 percent provide at least half of their results. In contrast, some respondents choose to not disclose any of their E&S metrics. More than five percent publicly disclose no such information, while between 15 and about 40 percent of respondent companies disclose no information addressing one or more particular subject areas. Compliance is the area with the greatest extent of non-disclosure, followed by management-oriented, health and safety, and resource conservation/recovery.

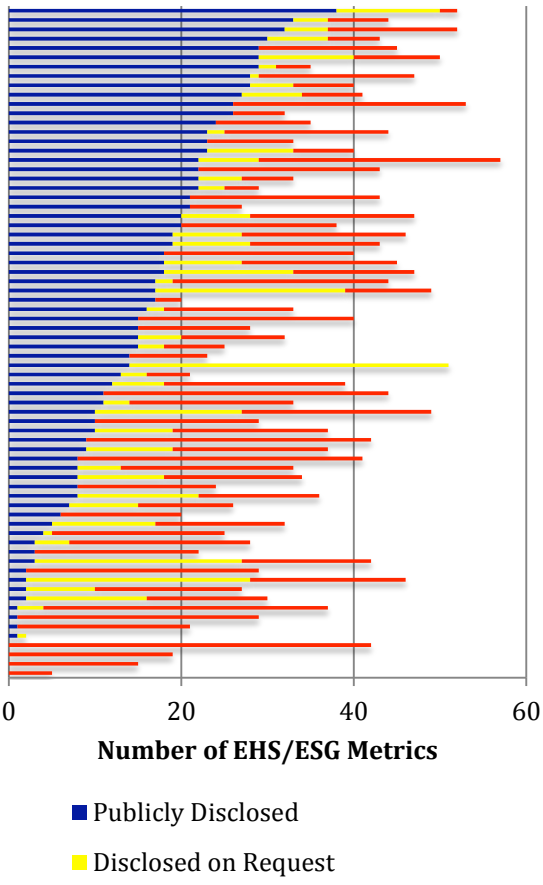
Exhibit 8
Reporting and Disclosure Practices of NAEM Survey Respondent Companies: Percentages of Firms Tracking Metrics that Provide Information to External Parties

Subject Area	Percentage that Publicly Disclose E&S Metrics			
	All	More than 75%	More than 50% of Metrics	No Metrics Disclosed
Resource Consumption	38%	52%	72%	15%
Resource Conservation/Recovery	30%	48%	58%	21%
Waste/Emissions	40%	50%	61%	9%
Health & Safety	14%	19%	40%	21%
Compliance	10%	22%	46%	38%
Management-Oriented	3%	19%	39%	24%
Total	3%	24%	64%	6%

Source: NAEM, 2011.

A company-level perspective on the extent of disclosure of E&S information by NAEM survey respondents is provided by the results shown in Exhibit 9. This chart shows, for each company, how many total EHS/sustainability metrics are internally tracked, and of these, how many are publicly reported and how many are disclosed on request. The data are sorted by the number of metrics that are publicly reported, with those reporting the greatest number shown at the top of the chart. This exhibit shows that there is great diversity within the sample population covered in the NAEM survey in terms of both how many E&S metrics are tracked, and of these, how many are disclosed through either routine reporting or upon request. Moreover, in viewing the data in this chart, there is no apparent relationship between the number of metrics tracked and the extent of disclosure, nor between the number of metrics publicly reported and the number disclosed on request. These results show that many companies report substantial numbers of E&S metrics, but that as often as not, they will disclose additional data if requested to do so. In addition, Exhibit 9 shows visually the pattern discussed immediately above—that very few respondents report or disclose all of their E&S metrics. In fact, companies represented in the NAEM survey very commonly track numerous metrics that are neither reported nor disclosed on request. What distinguishes the data that are reported or disclosed from those that are not is not clear and was not addressed in the NAEM survey, but may be a function of each company's understanding of what E&S issues are of interest to external stakeholders, along with due consideration of the need to protect potentially sensitive corporate information.

Exhibit 9
NAEM Survey Results: Company-Level Public Reporting and DIsclosure of E&S Metrics (N=72)



Source: NAEM, 2011.

Personal Perspectives of Corporate EHS Managers and Directors

While the NAEM survey results provide ample documentation of specific sustainability metrics and uses, they do not address the thought processes at work in companies or get to base level motivations. To explore these issues more fully, we interviewed eight EHS professionals. While the sample size was small, the goal was to further elucidate the more robust NAEM survey data, rather than to create a new data set that would be robust on its own.

Major observations include the following:

Companies use a variety of thought processes and approaches to define the EHS and broader sustainability metrics that are most internally meaningful and useful.

Most approaches include and incorporate traditional endpoints, notably compliance, safety, and often, some measures of resource consumption/conservation (e.g., energy).

The overall approach in most cases has, however, shifted over time from compliance to an assessment of several business-driven factors, some combination of which is used in most of the firms represented in our interview sample:

- How does an issue affect the business? Evaluating this question often involves assessment of the benefits and costs of the *status quo* and alternatives.
- What do important stakeholders (e.g., regulators, customers, the general public) expect or require of us?
- Where can we have a significant impact?
- What is within our capabilities?
- What does it cost us to track this issue, and what value do we receive from the new information?

Stakeholder concerns and issues vary widely in terms of prominence and importance to corporate thinking about sustainability metrics. For some companies (and industries) stakeholder interactions (including with investors) are quite limited, so there may be only modest consideration given to stakeholder views when defining metrics as well as very little outreach to collect input, share information, or develop relationships. In other cases, there is regular, ongoing interaction with stakeholders, and issues or concerns raised by external parties are directly considered in making decisions about what to measure (and report). This includes both adding new metrics and continuing to track E&S metrics that would otherwise no longer be tracked for internal business reasons. Among the stakeholders identified by some of the EHS professionals we interviewed are investors and ESG research and rating organizations. In these and other cases, it is clear that ESG issues are now viewed as important to maintaining a firm's reputation with customers and the general public. Moreover, for some of the firms, it is clear to those we interviewed that their perceived ESG posture and performance are important to maintaining or enhancing their corporate brand.

In some cases, moves to address stakeholder concerns have led to the capture of substantial business value. For example, a representative of a utility described a situation in which her firm decided that as an energy company heavily involved in demand-side management,[3] it needed to "walk the walk" and respond to concerns expressed by ratepayers and other stakeholders. To begin doing so, it installed substantial numbers of new electric meters at its 400 locations nationwide and collected new detailed data on internal electricity consumption. This information allowed the company to focus on efficiency improvements that have enabled it to reduce its electricity consumption by 17 percent since 2007.

[3] Demand-side management is an approach frequently used by utility companies that involves working with customers to reduce their consumption. Often this is done through providing information, technical assistance, financial incentives, and other techniques.

A significant area of focus used both to define new metrics and put them into operation involves culture change and organizational development. Sustainability is increasingly seen as core to the business among the companies in our interview sample, and the metrics used to measure performance must address both conventional indicators and the cultural and organizational factors that drive behavioral change and future success. Some of the companies represented in our sample have, for example, incorporated sustainability considerations into organization-wide initiatives to improve efficiency, productivity, innovation, and/or competitiveness. These considerations may include employee capability and empowerment, diversity, ethics, workplace issues, and other facets of employee and organizational health.

Specific approaches and techniques include the following:

- Monitoring and preventing extreme events, as a means to identify and eliminate root causes that contribute to other more common, though less severe, problems.

- Shifting from a focus on traditional EHS outputs to a more systemic examination of production operations (e.g., from tracking waste and recycling to overall material efficiency).

- Expanding the scope of metrics employed to include measures of "soft" indicators of internal capability, culture, and strength, such as training, employee satisfaction, engagement, and absenteeism; reputation/standing in host communities; and work practices.

- Focusing on key issues having both EHS/sustainability implications and significant impact on the core business. These vary greatly by company and industry, according to key business drivers, the nature and prominence of stakeholder concerns, company culture, opportunity to create/maintain financial value for the business, and other factors. Examples include modernizing the electricity grid, developing renewables, and deploying "smart meter" technology for an electric utility company; packaging, transportation, and "sustainable sourcing" for a food products company; and use of certified or "green" inputs for a consumer products company.

In many cases, the change in focus to a broader set of issues has been accompanied by a change in internal responsibility for carrying out key related functions and achieving results. In several of the companies represented in our interview sample, sustainability is being actively pursued at the corporate level by cross-functional organizations that include not only EHS (the traditional home for most such activity) but corporate communications, manufacturing, supply chain management, human resources, and many others. In some cases, recently created Sustainability, Corporate Responsibility, or similar departments, offices, or teams have been created to house and oversee key activities required to pursue this more multi-disciplinary approach.

Use of E&S metrics in internal decision-making is extensive but quite diverse.

In terms of the use of E&S metrics for decision making, the first and foremost use is generally to monitor and, as appropriate, modify ongoing operations. This is particularly true of the (typically) large percentage of metrics that are related to important operating parameters such as productivity, efficiency, and quality, and to downstream outputs and outcomes (e.g., resource consumption, compliance, health and safety incidents). E&S goals and specific targets often are set annually, with performance against them measured and reported up through management on a monthly and/or quarterly basis. Several of the firms in our interview sample report such information to senior management on a regular (quarterly or annual) basis. Within some firms, this

process is somewhat dynamic, as particular issues may be effectively addressed and no longer of senior management concern, while emerging issues may become a new focus.

The level at which E&S metrics and their underlying issues are actively monitored and managed varies widely within the small group of companies comprising our interview sample. At some, the process is overseen within the line organization (e.g., manufacturing), using an approach that is largely tactical in nature. In others, E&S issues are viewed as more integral to the firm's overall business strategy, and there is regular interaction between those responsible for at least some key E&S-related management activities and senior management.

Some firms addressed in our interview process apply a risk assessment/management approach to working with their E&S metrics. This is a long-standing approach in some companies, but increasingly, the nature of the risks examined is broadening, to address not only traditional endpoints such as injuries, non-compliance, and potential liabilities, but also access to key resources (e.g., water), input material prohibitions or limitations (e.g., forthcoming Registration, Evaluation, Authorisation and Restriction of Chemical substances (REACH) regulations to be issued by the European Commission), and the supply and price of material inputs. Some firms also are extending the scope of their risk/incident analysis processes to consider whether and under what conditions any problem or incident that has occurred at one company location also could take place at others.

Many interviewees stressed that they believe it important to keep their metrics simple and straightforward. Doing so simplifies data collection, analysis, and reporting, and also makes internal communication and day-to-day management decision making much easier. Some of those interviewed also have participated in efforts to help standardize (and ideally, reduce the number of) ESG metrics demanded and used on either an industry-level or overall corporate basis.

In addition, some firms will periodically select a sustainability metric, then thoroughly examine its impact on the business, considering the possibilities for increasing sales, reducing costs, and/or gaining market share or other competitive advantage. This may be done using tools and techniques that are well-developed and accepted in the firm or industry when examining other, more traditional factors. For example, one interviewee of a consumer products firm described how his company used a well-accepted industry methodology to assess the potential effects of reducing demand for water in a community with a large production operation—an endpoint with both environmental and social implications. They used market research to predict and quantify the impact on sales from a water use reduction program, and then conducted a pilot study to assess the effects of this new program in one region while comparing the results with those of a control region. The study showed a measurable impact (reduction) on employee absenteeism (hence costs) in the location implementing the pilot program.

The approaches employed to defining and populating internal EHS&S metrics have evolved and become more sophisticated over time.

All of the companies represented in our interview sample have been defining and populating sustainability metrics for some time; in some cases, for decades. For most, the initial focus was on basic measures such as emissions, compliance, safety, and waste generation and management. According to some interviewees, this long-standing involvement has enabled the companies to capture many improvement opportunities ("harvesting the low-hanging fruit"), and also to better understand what drives changes in the metrics (both what and how much), particularly within the "four walls" of the manufacturing environment. An area of growing focus within some of the

companies is on developing leading (predictive) ESG metrics, or at least in developing an understanding of what is not currently known that could improve performance in the future.

Over time the initial focus has broadened to include a number of other issues, and has been accompanied by some changes in overall approach. Understanding and responding to important external factors have become more common, as has the accompanying broadening of the frame of reference from manufacturing and in-house operations to much or all of the value chain. A number of people we interviewed indicated that their efforts have recently expanded to include their supply chain, from both the standpoint of setting and measuring performance against expectations and of involvement in identifying issues and possible solutions.

Several interviewees indicated that this broader scope of activity is very likely to continue in the future, and if anything, it will expand further to accommodate emerging challenges and opportunities. This trend may take a number of different forms, depending on a particular company's situation. In some cases, addressing the existing operations (and metrics) is likely to involve continuing the long-standing shift from pollution/incident control to developing means of preventing adverse outcomes and outputs in the first instance, particularly in a manufacturing environment. This might be done, for example, by redesigning products and production operations, or by modifying existing facility design and location processes. Some companies are now developing life cycle analysis (LCA) data and tools to inform and facilitate these ways of moving toward more safe, environmentally sound, and cost-effective products, processes, and plant and equipment.

In addition, the "envelope" for how sustainability metrics are defined and populated also will need to accommodate regulatory and market changes that may impose new constraints, particularly for companies (as sampled here) that are of significant size and sell into international markets. Prominent examples include potential (and planned) regulatory constraints to be issued under the European Union REACH directive, product- or customer-specific chemical composition requirements (or prohibitions), and growing demands for sustainably produced production inputs. The nature and specific challenges posed by these emerging expectations vary substantially across industries and jurisdictions, but many interviewees predicted that these types of changes lie ahead for their companies. Importantly, the significance of these considerations is magnified by the use of global supply chains by many mid-size and large U.S. companies. More extensive and active management of the supply chain from an ESG perspective is expected by a number of the interviewees, though at the same time, they recognize that this may pose both logistical and internal managerial challenges.

Some company representatives also indicated that they expect to move toward a more integrated form of ESG measurement and reporting, and several have started down this path. In one firm, there is reportedly significant internal collaboration and a broad perspective has been taken, which considers public policy, compliance obligations, risks, governance, customer impacts, and a variety of other issues. Taking this expansive and cooperative approach also can provide the collateral benefit of breaking down the internal silos that often inhibit ongoing efforts to bring about cultural and behavioral change across the company. A related issue and area of focus in some firms is on developing methods for quantifying and capturing the economic benefits of ESG improvements and developing consistent and robust approaches that can be applied in many different contexts.

The distinctions between the ways in which E&S/ESG metrics developed for internal use versus others that are provided to external parties (particularly ESG researchers) are limited but important.

Across our interviewee sample, most report few differences in the ESG data used internally and the information provided to external parties. In one or two cases, there is no external reporting, but in most others, the differences in what is used internally and what is externally reported or disclosed are due to one or more of several discrete factors: 1) external interest in an issue that changes infrequently (e.g., corporate policies); 2) a finer granularity requested by a particular entity or group of stakeholders (e.g., global versus product- or location-specific information); 3) an interest by the firm in engaging with a particular stakeholder or group (e.g., host communities, potential employees); or 4) are limited to differences in data format or units rather than scope of coverage. One interesting divergence reported by a few interviewees is the development and use of information on how the firm is viewed by external stakeholders (particularly ESG rating and ranking organizations) and how these views influence company revenues, share price support, and other financial results.

On a related point, it seems clear from several of the interviews that at least for some firms, the influence of investors, ESG researchers, and other capital market participants has been felt, and has induced changes in the ways that companies define, use, and disclose ESG metrics, and organize their functions and people to develop, evaluate, and report the necessary ESG data. Interviewees cited several examples of new issues/metrics that they are now tracking, evaluating, and/or reporting more extensively, that were brought to their attention by external stakeholders, including ESG researchers. Examples include labor practices (particularly in the global supply chain), corporate governance, risk management, and human rights.

With that said, it also is clear that some firms have used the results of these exercises to conclude that at the present time, ESG investors and their information providers are not sufficiently important to justify ongoing public reporting or responding to all (or in some cases, any) external requests for information. Others are being more selective in responding to such requests, and some companies included in our interview sample are currently developing formal methods and processes for handling future ESG information requests. Interviewees indicated that such steps are a response to the growing volume, depth, and frequency of these requests. Survey fatigue is clearly a risk.

Several interviewees described how external requests for ESG information are shaping internal decisions about how ESG issues are evaluated and managed. A common theme is that the responsibility for sustainability (both substantively and in terms of reporting) is being shared among more internal organizations and functions, rather than being centralized in (and limited to) EHS. Such steps are acknowledged by many as a key means of driving more sustainable business behavior throughout the organization. As highlighted above, some of the companies have created new sustainability or corporate responsibility offices or teams to lead strategy development, coordinate actions, collect, process, and report ESG results, and/or fulfill other responsibilities. Often, these organizations are multi-functional in nature, and may include representation from environmental management, health and safety, community relations, investor relations, legal, human resources, and product safety, among others. While this trend has been taking shape for some time, interviewees generally indicated that input from external stakeholders has at least influenced their thinking about how these new structures should be put into place, even though it may not have provided the original impetus for creating them. Collectively, the interviews suggest that there is growing recognition that not only is leadership from the top crucial to pursuing organizational sustainability, but that sustainability and its interactions with external stakeholders (engagement and reporting) can and should be intimately tied to business objectives and long-term success factors.

The GRI is an important influence on corporate ESG reporting and disclosure.

As in other respects, there is considerable variability in the extent to which the companies represented in our interviews publicly report ESG information, and if so, through what means. There is, however, unanimity among those firms issuing sustainability or similar reports that the GRI is an important influence. Some firms use the GRI as a general guideline to understand what types of ESG information may be of interest to external stakeholders and in what form. Even if they have chosen not to report (at least at present), they still perceive some value in gaining awareness of what questions they are likely to receive from external audiences regarding ESG issues. They can then either prepare the information requested or be able to discuss why it is not relevant to or available for their firm. Some have gone so far as to develop an index to where on their corporate web site information corresponding to the specific GRI indicators may be found. Others closely follow and report according to the guidelines and find value in providing some of the contextual information requested in the guidelines along with the quantitative indicators.

Despite receiving widespread support among the interviewees in general, there also were several concerns expressed about the GRI. Some view it as cumbersome, and because it "tries to be all things to all people," it therefore contains many questions that don't apply to a large number of U.S. companies or are otherwise not material. Another concern is that the GRI is not generally well known outside of the environmental or EHS profession. As a consequence, decision makers within many companies do not immediately recognize a need to participate in GRI or even to report information parallel to GRI's data requests.

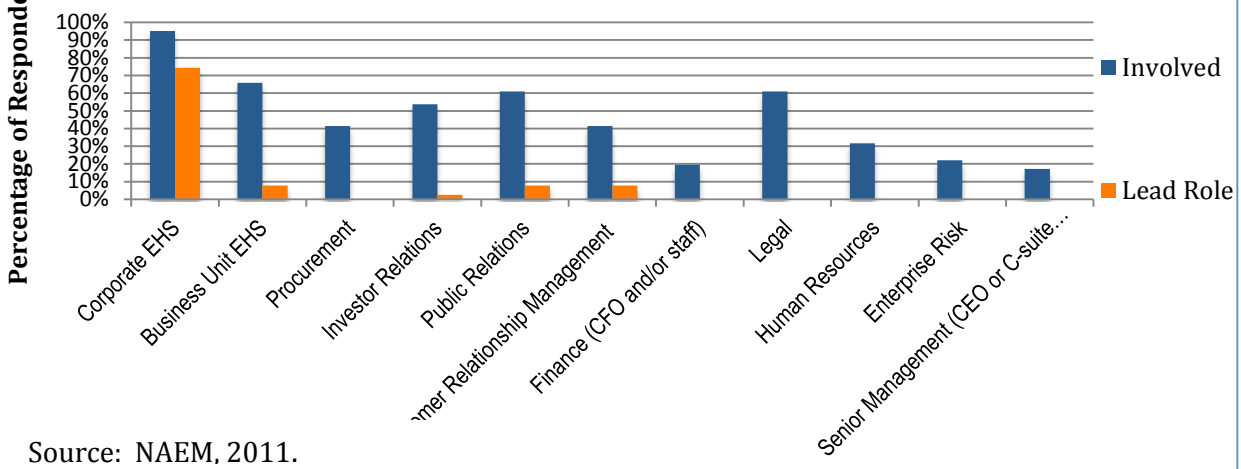
Some interviewees also believe that the GRI has an important role to play in bridging the gap between current practices and fully integrated (sustainability and financial) reporting. For this to happen, though, a way will need to be developed that reduces the number of indicators to what might be considered a more manageable total (20 or so), while not losing its key focus on the determinants of organizational sustainability.

Corporate Interactions with External Stakeholders, Including ESG Researchers

As shown below in Exhibit 10, the NAEM survey responses strongly suggest that the EHS function plays a central role in how respondent companies[4] assign responsibility for receiving and addressing externally generated requests for sustainability information, though a number of other business functions -- notably public and/or investor relations and legal—may be involved as well. In nearly all of the companies, EHS plays the lead role.

[4] The survey questions in the second part of the NAEM survey, addressing interactions with external stakeholders, were provided only to the initial set of companies responding to the questionnaire. Accordingly, the data presented in this section reflect responses from a smaller set of companies (about 38) than the survey results addressing EHS/sustainability metrics presented and discussed above.

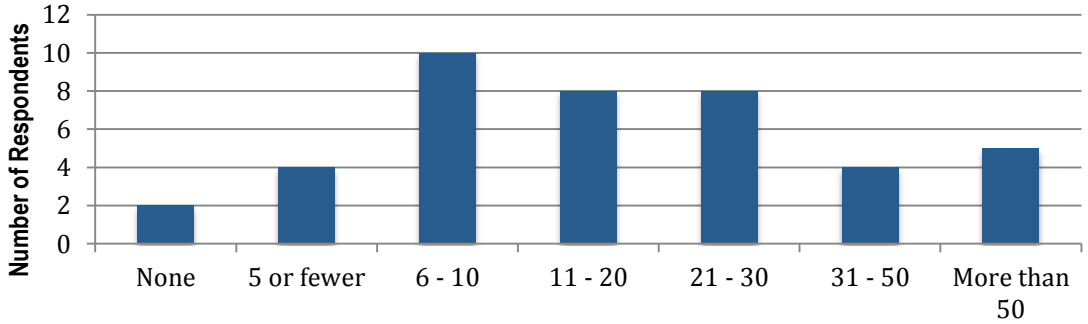
Exhibit 10
Involvement of Business Functions in Responding to EHS/ESG Data Requests (Q3 2010 data)



Source: NAEM, 2011.

As noted in the Background and Context (Section 2, above), there is a perception within the EHS field and in many companies and industries that requests for ESG information are becoming time-consuming, even burdensome. Some firms continue to attempt to satisfy all such information requests, but others have become more selective in terms of which requests they respond to, or have otherwise limited their responses to requests for ESG information. Exhibit 11 provides some perspective on the scope of this issue. The number of requests received by the companies ranges from none or just a few, to one or more per week, depending on the company. And although they are not in the majority, a few companies receive dozens of information requests annually. Because the size of the ESG researcher community is limited, it is not possible that information requests from this constituency account for all or even most of the external requests for EHS/sustainability information received. Anecdotally, and as supported by our interviews of corporate EHS managers and directors, a substantial number of information requests come from major customers, issue-specific NGOs, investors/potential investors or limited information requests from firms that cover a broader range of issues (often follow up for clarification on information that is disclosed).

Exhibit 11
Number of Annual External Requests for EHS/ESG Information (Q3 2010 Data)



Source: NAEM, 2011.

NAEM survey responses indicate that the estimated time required to respond to external ESG information requests varies widely, from less than one day of effort per year to, in several cases, one or more full-time equivalents. An important caveat, however, is that a significant fraction of NAEM survey respondents indicated that they did not know how much time is required, presumably because responsibility for developing and providing the responses is distributed among EHS and several other business functions in many companies, as shown above. With that said, the NAEM survey responses make clear that in more than a few companies, responding to information requests requires serious effort and commitment of internal resources.

Given the non-trivial investment of time and resources required to meaningfully respond to EHS/sustainability information requests, at least at some NAEM survey respondent companies, it is of some interest to understand what factors or criteria these firms use to determine whether, to whom, and to what extent they will provide the information requested. Exhibit 12 shows the relative importance of a number of different factors in motivating respondent firms to provide EHS/ESG data to outside parties who request it. Results show that while collectively, many firms view a substantial number of these factors to be at least somewhat important, it is very clear that satisfying customer needs and expectations is the primary concern in terms of guiding corporate behavior. Interestingly, attracting and maintaining investor interest is viewed as "somewhat important" by a majority of responding firms, but crucially important by very few. This is at least somewhat surprising, given that the investor community is the major consumer of (and generally, the only paying client for) ESG data and ratings, indexes, and other related products.

Exhibit 12
Importance of Business Drivers in Responding to EHS/ESG Information Requests

Importance	Percentage of Respondents Indicating Importance of 4 or 5 on 5-point scale	Business Drivers
Nearly Universal	90+	♦ Respond to customer request/inquiry ♦ Satisfy customer requirement(s)
Extensive	60-89	♦ Improve external stakeholder relations ♦ Attract/maintain investor interest ♦ Create or demonstrate competitive advantage ♦ Demonstrate that legal requirements have been met ♦ Comply with company policy and/or culture
Situational	40-60	♦ Actively manage risk ♦ Demonstrate progressive management ♦ Improve employee morale, recruiting, and/or retention ♦ Satisfy lender concerns

Source: NAEM, 2011.

Conclusions: Corporate E&S Metrics Development and Use

The data presented above can be summarized into a number of general findings. Looking first at the use of E&S metrics by companies for internal management purposes, it is clear that most NAEM

survey respondent companies track dozens of individual metrics, and that the major areas of emphasis within typical corporate EHS programs are all represented in most cases, as are a substantial number of metrics focused on internal management practices and their results. The use of defined targets associated with these metrics also occurs within virtually all respondent companies, though in general, to a lesser degree. The most common primary purpose for tracking these metrics (and targets, as appropriate) is for internal accountability. Very frequently, performance according to these metrics is reported to the highest level of the firm (the C-suite or Board), and the data being collected and reported tend to be global in scope. When and where these E&S data are being collected and reported up the internal management chain, a substantial portion of this information also is being publicly reported or at least being made available if requested. At the same time, there are other, relatively numerous E&S data that are not being made available by most companies. Metrics in certain areas tend to be reported or disclosed more frequently (e.g., resource consumption, emissions, waste) than in others (e.g., compliance, health and safety).

Interviews with seasoned corporate EHS managers and directors yielded a number of findings and conclusions. Corporate E&S metrics development and use occurs in a very business-driven context, with benefits and costs, important stakeholder expectations, and opportunities for impact often being key considerations. The range of metrics used by companies usually starts with a core of widely recognized measures of compliance, health and safety, and emissions and waste, but in more recent time has expanded to include both a variety of other types of endpoints (e.g., diversity, philanthropy) and a far broader scope of application, moving from an internal focus to, in many cases, customer use and supply chain contributions to overall impact.

In parallel with the broadening of the traditional EHS scope of measurement and monitoring activities to include a more extensive set of E&S (or ESG) metrics, many companies are making organizational and structural changes to bring to bear the appropriate expertise to identify and manage the broader array of ESG issues and in due course, develop and report the accompanying data. Generally, these new structures are cross-functional and include representatives from a number of other corporate functions (e.g., investor relations, manufacturing, and supply chain management). Although it is felt in different ways and to different degrees, it is clear that ESG researchers, investors, and other stakeholders are influencing this evolution as it takes place.

Based on our interview sample, it appears that corporate EHS people are generally supportive of the GRI sustainability reporting guidelines and, to the extent that their firms report, have found them useful. With that said, they also believe that the guidelines contain too many questions and should be consolidated. Interestingly, this view also was independently voiced by several ESG researchers (see Section 4, below).

With respect to interactions with the ESG research community, requests made for corporate ESG information appear to place a highly variable burden on corporate recipients, many of whom, as shown by the NAEM survey, are the firms' EHS staff. The EHS directors, managers, and executives responding to the survey also indicated that their behavior in evaluating and deciding how to address information requests is driven by a number of different factors, the most important of which is responsiveness to customers.

Section 4: ESG Research Ratings and Methods

The ESG Ratings World

"Mapping" the14 ESG ratings to one another reveals disparate levels of detail. In addition, firms use radically different structures for their ratings. These two findings create a challenging environment within which to begin our analysis. Despite these challenges and the limitations of using only publicly available information, the mapping does allow a comparison of the ESG industry's expressed needs with internal company data uses and disclosure.

Most of the firms that developed and use these ratings do not provide data element/indicator level descriptions of their methodologies. We therefore acknowledge that there may be gaps in the descriptions and mappings of the ratings. Nonetheless, they are based on what each rating firm itself chooses to disclose. Exhibit 13 shows the level of detail we had available for each of the ratings. As shown in this table, half of the ratings (seven) we analyzed for this study had detailed information available regarding the data schemas they used. The ratings include representatives from three of the five general categories, i.e., we were not able to obtain detailed (data element-level) information on the SRI mutual fund or research house ratings evaluated in this study. Because the objective of the mapping was to understand the data requirements of the ratings agencies rather than to make normative judgments about them, we have not analyzed the weightings or scoring approach reflected within each rating. In the few instances in which some of this detail is available, it demonstrates that all categories of data are not treated equally—meaning that some categories have much less weight in a scoring algorithm than others. Therefore, the mapping is binary in nature; that is, it indicates the presence or absence of certain concepts or labels, not a quantitative scale or weighting of each concept or data element, or a judgment about its overall importance.

Ratings Included in This Study

- Socially responsible investment managers use (among other criteria) ESG factors, and perform their own internal company ESG evaluations to select companies and to create investment portfolios (e.g., mutual funds), as well as to engage with portfolio companies. We chose two well-known fund companies, **Calvert** (based on the Signature Strategies Fund) and **Pax World** to represent this category.
- ESG-based financial indexes are designed to identify companies with the "best" ESG characteristics, with the idea that such firms will outperform their less sustainable counterparts in the marketplace over time. We examined several of the most prominent indexes in this area: the **Dow Jones Sustainability Index** (DJSI), the **FTSE4Good Index**, the **MSCI KLD 400 Social Index**, and the **CRD Analytics Global Sustainability Index**.
- The third category comprises two research resources not otherwise captured, **Asset4** and **MSCI Intangible Value Assessment**. The ratings produced by entities in this category are primarily oriented toward investors but also may be made available to other interested parties.
- As a fourth category, we have included several ratings that are not investor related at all; it includes a "best of" list published by **CR Magazine**, and the *Best 100 Corporate Citizens* List, as well as the list of the *Global 100 Most Sustainable Companies* published by **Corporate Knights** (Global 100), **CSRHub**, a tool primarily intended for company benchmarking, and **GoodGuide**, a list of product sustainability ratings for consumers.
- The final category is the ratings produced by legacy firms **Innovest** and **KLD Research & Analytics**. Both of these previously independent companies were acquired by Risk Metrics, which in turn was then acquired by MSCI. (We have provided a more detailed description of each of these fourteen ratings and the organizations that have developed them in Appendix A.)

We emphasize here that this is not a comprehensive survey of all ESG research or ratings used in the world today, or even in North America. It does, however, capture the work of most major firms servicing the socially responsible investing (SRI) market in the US. The research firms represented here include Sustainable Asset Management (SAM), MSCI (as well as its component parts KLD Research & Analytics and Innovest Strategic Advisors), EIRiS, IW Financial*, CRD Analytics, and Asset 4.

Among the services we did not map are those primarily focused on corporate governance, such as MSCI's ISS (though other, more E&S focused MSCI services are included), and Governance Metrics. We note that these two firms are increasingly including E&S indicators in their ratings, but their focus remains more traditional governance and financial issues. Glass Lewis is also a corporate governance research firm, but it does not produce ratings at all, even in the traditional governance space, instead focusing on proxy voting recommendations. In addition, there are two major ESG research firms not represented here that warrant mention, TruCost and Sustainalytics. These two firms support the Newsweek Green Rankings. TruCost uses a methodology to evaluate environmental performance (i.e., that does not include social, governance, or economic endpoints) that makes use of company public disclosure, but also fills in any information gaps based on an input-output model that estimates and monetizes environmental impact. While a valuable addition to the industry, this approach does not help us to understand the relationship between what ESG firms ask and what companies track for their own internal management purposes. While the Sustainalytics approach is more consistent with the purposes of this study, the available information on their approach does not provide sufficient detail to warrant the addition of this firm into our analytical matrices. In addition to these major firms, our analysis reaches out to expand our perspective by providing examples of in-house investment research (Calvert and Pax World), as well as other research efforts outside of the SRI space. In short, while the analysis of ESG research and ratings provided here is not comprehensive, we believe it is representative of the work done within this industry.

* Study co-author Mark Bateman is the Director of Research for IW Financial and directly supports the work IWF does for CR Magazine in publishing its corporate citizenship lists based on the methodology captured for this study. He played a large role in developing the CR Magazine methodology and continues to work with the Methodology Committee as its process evolves over time. All of the information contained within this study regarding the CR Magazine methodology is based on publicly available data.

Basic Organization of the Ratings

As mentioned above, the structure and level of detail available on the various ratings are highly variable even at the highest level of organization, as illustrated in Exhibit 13. These differences in what information firms disclose regarding their ratings and how it is presented immediately presented challenges.

Exhibit 13
Level of Detail Included in Ratings Documentation

Category	Rating/ Organization	Included Elements in Ratings Documentation	Transparency of Data Schema
SRI Mutual Funds (In house research)	**Pax World**	Categories; some data elements	Mid range
	Calvert	Categories; some data elements	Mid range
Financial Indexes incorporating ESG Factors	**DJSI**	Full Survey	Detailed
	FTSE4Good	Categories; complete list of data elements	Detailed
	MSCI KLD400	Categories; Sub-categories	Limited
	CRD Analytics	Categories; some data elements	Limited
Research House Ratings	**MSCI IVA**	Categories; Sub-categories	Limited
	Asset4	Categories; Sub-categories	Limited
Non-investor Focused Ratings	**CR Magazine**	Categories; complete list of data elements	Detailed
	GoodGuide	Categories; complete list of data elements	Detailed
	CSRHub	Categories; Sub-categories and examples of data elements	Mid Range
	Global 100	Key Performance Indicators	Detailed
Historical Ratings	**KLD**	Categories; data elements/criteria	Detailed
	Innovest	Categories; Sub-categories; data elements	Detailed

Exhibit 14 outlines the basic organization of these fourteen ratings. The exhibit identifies the major categories as presented by the creator of each rating. Where a category from a given rating closely matches a corresponding category from another rating, it is included in the same row of the table. In this table, we use each rating's particular terminology as expressed by its creator/sponsor, to provide insight into the philosophy and beliefs underlying each one.

One of the first things that becomes apparent when reviewing this table is the coverage across these ratings for the four Topic Areas of *environment*, *social*, *governance*, and *economic*. Out of the fourteen ratings we mapped, thirteen have categories within the *environment* and *social* Topic Areas. (One rating does not make use of categories at all. Instead, the developers of the Global 100 use ten very specific indicators for their rating. They do have indicators within the *environment* and *social* Topic Areas, but do not subdivide their rating process into categories.) Eight of the thirteen ratings that aggregate indicators into categories name some form of the *governance* category, and four of the thirteen have a category specifically focused on *economic* issues.

Exhibit 14
Major Categories Used in ESG Rating and Ranking Methods

	SRI Mutual Funds (In house research)				Financial Indexes Incorporating ESG factors		Research House Ratings			Non-investor Focused Ratings			Historical Ratings	
	Pax World	Calvert	DJSI	FTSE4Good	MSCI KLD400	CRD Analytics	MSCI IVA	Asset4	CR Magazine	Good Guide	CSRHub	Global 100	KLD	Innovest
E	Environ-mental	Environment	Environ-mental Dimension	Environ-mental	Environment	Environmental Performance Indicators	Environ-ment	Environmental Performance	Environ-mental	Environ-ment	Environment		Environment	Environment
				Climate Change					Climate Change					
S	Social		Social Dimension			Social Performance Indicators	Social	Social Performance		Society				Social Assessment Criteria
		International Operations and Human Rights		Human and Labour Rights					Human Rights				Human Rights	
				Supply Chain Labour Standards										
		Indigenous Peoples' Rights												
		Workplace			Social (Employees and Supply Chain)				Employee Relations		Employees		Employee Relations	
									Philanthropy					
		Community Relations			Social (Community and Society)						Community		Community Relations	
		Product Safety and Impact								Human Health Impacts			Product	
													Diversity	
				Countering Bribery										
					Social (Customers)									
G	Govern-ance	Governance and Ethics			Governance		Govern-ance	Corporate Governance Performance	Governance		Governance		Corporate Governance	
ECON			Economic Dimension			Key Financial Performance Indicators		Economic Performance	Financial					

Looking at the number of major categories within each rating, there is quite a range—from a low of two to a high of seven. The average is just over four categories per rating. Digging a little deeper, we find that the rating with just two categories (Innovest) has organized its rating into *environment* and *social* categories. Interestingly, two of the five ratings that have three categories (CRD and DJSI) both use a schema of environment, social, and economic/financial, while two (Pax World and MSCI IVA) use an ESG schema of environment, social, and governance and one (GoodGuide) uses environment, social, and human health impacts. For the ratings with more than three categories, the ratings use many different combinations.

By far, the *social* Topic Area is organizationally the most complicated, with more diversity at the category level within this area than in the other three. The breadth of issues covered leads directly to this wider array of organizational approaches. There are eleven socially themed categories represented among the thirteen ratings having categories. The ratings schemas of these thirteen organize themselves with from one to five different categories within the *social* Topic Area. Most frequently, a category has a generic "social" type label. Seven ratings are organized this way. Of those seven, six have no other social categories. In addition, six of the major categories identified are used by only a single rating firm, as shown in Exhibit 15.

This is not to imply that a particular rating firm is failing to address certain issues simply because it is not represented at the category level. The issue may simply be considered at a category level by one firm, but at different level in the rating hierarchy by a competitor. As an example, FTSE4Good has a category entitled, "Countering Bribery." Several of the other companies incorporate this issue in their ratings, but do not have it at the category level. In the tables and discussion that follow, we have included the presence of these issues at the subcategory (and indicator) level, to provide a more complete assessment of which issues are of interest to ESG researchers and their clients. Our approach here is one of "best fit," particularly when looking at concepts that match categories from other ratings. Admittedly, we made some judgment calls to determine where a particular concept belonged when the firm in question did not disclose detailed information on its methodology. Exhibit 15 summarizes the counts of ratings identifying categories compared to the number that cover the issue. Within the *environment* Topic Area, the lone rating (Global 100) that did not have the environmental category named, does cover environmental issues, so there is universal coverage at this level of detail. The second major category within this Topic Area relates to climate change. Two ratings (FTSE4Good and CR Magazine) specifically identified a climate change category. Nine other ratings incorporated climate change issues into their ratings in a way that we were able to identify, while three made no noticeable reference to climate change in their public ratings documentation.

Exhibit 15
Number of Ratings per Category Concept

Number of Ratings with Categories	Number of Ratings Covering Concepts	Category
13	**14**	**Environment**
2	11	Climate Change
7	14	Social
4	10	Human Rights
1	8	Supply Chain
1	5	Indigenous Peoples
4	12	Employee/Labor
1	8	Philanthropy
3	7	Community
3	7	Products
1	8	Diversity
1	5	Anti-Bribery
1	4	Customer Issues
8	12	Corporate Governance
4	5	Economic

Because of the diversity in approaches, the *social* Topic Area was the most difficult to map. We emphasize that the absence of an issue of concern as a category does not indicate the complete absence of that issue within any of the fourteen ratings

schemes. Nor does the presence of an issue area as a category automatically indicate a substantial overall weighting within an evaluation, but it does provide an additional level of transparency into the rating and suggests some substantive level of importance. The most frequently used categories in the *social* Topic Area (aside from a generic "social" category) are human rights (four at the category level and six below) and employee relations(four at the category level and eight below). Regarding human rights, a separate supply chain category is present in the FTSE4Good schema in addition to its human rights category and is present in three other ratings below the category level that do not have human rights coverage, as well as five below the category level that do have human rights coverage. Calvert has an indigenous people's rights category in addition to its human rights category and three other ratings have indigenous rights coverage below the category level and also have human rights or supply chain approaches. Within the employee relations domain, community and product categories are present in three ratings each with each also having four additional ratings covering the topic below the category level; and a single rating identifies diversity as a category while seven additional ratings address the topic of diversity at the next level of organization.

Within the *governance* Topic Area, eight ratings have categories specifically labeled as governance, while four additional ratings cover governance topics somewhere within their schemas. And finally, four ratings have categories labeled within the *economic* Topic area, and one additional rating covers economic issues elsewhere within its schema.

Cross-Cutting Thematic Approaches

In reviewing the schema of the ratings, it became obvious that different thematic approaches were used to evaluate the four Topic Areas (*environment*, *social*, *governance* and *economic*). To evaluate these differences within a coherent structure, we applied four distinct attributes to the categories and subcategories used within the ratings: POLICY, MANAGEMENT SYSTEMS/STRUCTURES/ PROGRAMS, DISCLOSURE, and PERFORMANCE. These correspond to the general components of a coherent, systematic approach to managing important ESG and other organizational issues that we have defined in previous work.[5] This approach includes indicators that speak not only to a company's capability to improve its ESG performance but also its ability to optimize its use of corporate resources to either generate cost savings or minimize the net expense of attaining performance improvements. In our view, this capability will, in part, determine which companies are truly sustainable in the long term and which are not.

As discussed earlier, the generally limited level of detail made public in describing the ratings schema makes it difficult to definitely determine which Approach(es) are used in a given rating to address a specific theme; the objective here is again to determine areas of emphasis. Those ratings that obviously incorporate certain Approaches in the public schemas likely place more emphasis on that Approach than on the other Approaches, even if all the Approaches are present (though not transparent) in some form within the full methodology.

One of the complaints leveled at ESG evaluations is that there is not enough emphasis on performance. As shown in Exhibit 16, all 14 ratings use a PERFORMANCE Approach within a Topic Area at least as often as any other Approach. For example, within the *environment* Topic Area, the sponsors of all 14ratings made clear that some kind of PERFORMANCE metric was used and evaluated, while only ten of fourteen feature disclosed information on the use of MANAGEMENT SYSTEMS / PROGRAMS. In fact, as a group, these ratings also used a PERFORMANCE Approach more frequently,

[5] See for example, Soyka, and Bateman, 2010.

often much more frequently, within the *environment*, *governance*, and *economic* Topic Areas, and at least as frequently within the *social* Topic Area.

Exhibit 16
Number of Ratings Using Thematic Approaches

	Environment	Social	Governance	Economic
Policy	8	8	8	1
Management Systems/ Programs	10	9	4	0
Disclosure	9	8	4	0
Performance	14	9	10	5

Indeed, PERFORMANCE is generally the most frequently used Approach across the Topic Areas, as shown in Exhibit 17. As an example, CR Magazine included a PERFORMANCE Approach in each of the four Areas. Its next most frequently used Approach was POLICY, used in three of the Topic Areas. (The only counterexample is FTSE4Good, which only specifies a PERFORMANCE Approach in its Climate Change category.)

Clearly, ESG evaluators are willing to use performance metrics as part of their ESG evaluations and are interested in doing so. Efforts to further expand the use of performance metrics will, however, need to overcome several hurdles for ESG researchers and raters, including the lack of broad public availability of data. Just as one example, in the Russell 3000, more than 92 percent of companies do not disclose total energy use.[6] Without disclosure of this information, it is impossible to evaluate the performance of energy use by more than a small slice of an investment universe.

Exhibit 17
Count of Topic Areas in which Ratings use each Thematic Approach

	Summary counts	Policy	Management Systems/ Programs	Disclosure	Performance
SRI Mutual Funds (In house research)	**Pax World**	3	3	3	3
	Calvert	3	3		3
Financial Indexes incorporating ESG factors	**DJSI**	3	3	3	3
	FTSE4Good	2	2	2	1
	MSCI KLD400*	1	1	2	3
	CRD Analytics*	?	?	?	2
Research House Ratings	**MSCI IVA***	?	?	?	1
	Asset4*	1			3
Non-investor Focused Ratings	**CR Magazine**	3	2	2	4
	GoodGuide	2	2	2	3
	CSRHub	3	3	3	3
	Global 100	1	1	1	1
Historical Ratings	**KLD**	1	2	1	3
	Innovest	3	2	2	2

*These ratings had clear reference to some Approaches in some Topic Areas, but it was not possible to determine whether additional Topic Areas used these Approaches or whether other Approaches were used at all.

[6] Data provided by Glen Yelton, Research Manager, IW Financial, December 14, 2011.

In addition, ratings use roughly the same number of Approaches in the *environment* and *social* Topic Areas, as shown in Exhibit 18, though four of the ratings provide no detail to help understand the Approaches used within the *social* Topic Area.

The number of Approaches used for *governance* and *economic* evaluations vary greatly from those used in the *environment* and *social* Topic Areas. On its face, this seems reasonable. *Governance* and *economic* issues are markedly different in nature than environmental and social issues. In addition, the nature and extent of available information are fundamentally different. Whereas a good deal of the information used to evaluate environmental and social issues comes from voluntary disclosure by companies, the majority of information used to evaluate governance and economic issues comes from mandatory disclosure in regulatory filings.

Finally, the *economic/financial* Topic Area is the least frequently used, with the least diversity in evaluative Approaches. All five ratings incorporating this Topic Area use PERFORMANCE metrics, four using them exclusively within the category. One thing to note is that the users of many of these ratings are investors who then provide their own layer of economic/financial analysis, often using their ESG evaluations as one among several important inputs. In such cases, the ratings here may be used "only" for the ESG/SRI/sustainability evaluation. It is also important to note that economic factors may be embedded into the rating in ways other than through a distinct economic category, and certainly may be factored into any investment decision after these ratings are calculated.

It is important to note that two of the ratings (CRD and MSCI IVA) disclosed lists of environmental sub-categories, but did not disclose enough detail to determine which Approaches they used in evaluating them. These two, and two additional ratings (MSCI KLD 400 and Asset4) did not disclose enough detail regarding social sub-categories to evaluate the Approaches used. Finally, MSCI IVA also incorporates *governance* issues, but again, the detail on Approaches was not apparent in the disclosed schema.

Finally, we again note that this analysis is based on a binary evaluation—each Approach is either present or not within the public description of the schema. Exhibit 18 does not speak to the frequency or significance of use of a particular Approach within a Topic Area, or across an entire rating.

Exhibit 18
Inclusion of Various Approaches in Major ESG Ratings and Rankings

Thematic Approach	SRI Mutual Funds (In house research)		Financial Indexes incorporating ESG Factors				Research House Ratings		Non-investor Focused Ratings				Historical Ratings	
	Pax World	Calvert	DJSI	FTSE4Good	MSCI KLD400	CRD Analytics	MSCI IVA	Asset4	CR Magazine	GoodGuide	CSRHub	Global 100	KLD	Innovest
E						*	*							
Policy	x	x	x	x					x	x	x			x
Management Systems/Programs	x	x	x	x	x				x	x	x		x	x
Disclosure	x		x	x	x				x	x	x		x	x
Performance	x	x	x	x	x	x	x	x	x	x	x	x	x	x
S					*	*	*	*						
Policy	x	x	x	x					x	x	x			x
Management Systems/Programs	x	x	x	x					x	x	x		x	x
Disclosure	x		x	x					x	x	x		x	x
Performance	x	x	x						x	x	x	x	x	x
G							*							
Policy	x	x	x		x			x	x		x			x
Management Systems/Programs	x	x	x								x			
Disclosure	x	x	x								x			
Performance	x	x	x		x			x	x	x	x	x	x	
ECON														
Policy													x	
Management Systems/Programs														
Disclosure														
Performance						x		x	x			x	x	

* These ratings did not disclose sufficient detail on the thematic approaches used to complete this chart. In some cases, some thematic approaches were apparent and have been marked appropriately in addition to this generic notation.

Issue Area Coverage

Exhibit 19 shows the wide range of the number of issues that each rating addresses within the Topic Areas. In assembling this table, multiple indicators related to the same issue were collapsed to reflect the issue, not the indicator. As an example, the CR Magazine methodology looks for disclosure of more than 40 specific employee benefits. Rather than attempting to capture 40 data elements in this mapping, we captured the overall concept of employee benefits and then determined whether other ratings also include an assessment of employee benefits. It is possible, even likely, that another rating that addresses benefits would consider a different list (or simply fewer benefits). As it turns out, two other ratings (GoodGuide and CSRHub) identified "benefits" within their ratings schemas.

Exhibit 19
Number of Distinct Issue Areas per Rating

Category	Rating/ Method	Envir. Count	Social Count	Gov. Count	Economic Count
SRI Mutual Funds (In house research)	**Pax World**	13	17	1	0
	Calvert	9	10	1	0
Financial Indexes incorporating ESG factors	**DJSI**	7	10	1	0
	FTSE4Good	4	8	0	0
	MSCI KLD400	5	12	1	0
	CRD Analytics	4	4	0	1
Research House Ratings	**MSCI IVA**	12	12	1	1
	Asset4	5	7	1	0
Non-investor focused ratings	**CR Magazine**	9	6	1	1
	GoodGuide	15	15	1	0
	CSRHub	12	13	1	0
	Global 100	4	2	1	2
Historic ratings	**Domini 400**	6	12	1	0
	Innovest	7	4	0	0

The number of environmental issues per rating ranges from four to fifteen, while the range of social issues per rating is two to seventeen. The mean is eight for *environment* and more than nine for *social*. The median, however, is seven for *environment* and ten for *social*.

It is important to note that a quick scan of the "issues" listed in this analysis shows that they are on the whole more specific within the *environment* Topic Area than within the *social* Topic Area. This is a reflection of the absolute breadth of issues covered in the *social* Area. Therefore, there is no useful comparison to be made between the number of environmental issues versus the number of social issues within a given rating at the absolute level. It is possible, however, to draw some rough conclusions about the relative areas of emphasis based on the specificity of the two Topic Areas within a rating. Given the complexity of the social issues, most raters exhibit a much higher count of social issues within a rating than environmental issues. For three of the ratings, however, (Innovest, Global 100, and CR Magazine), this relationship is flipped. This seems to reflect an emphasis on environmental issues within these ratings, or at least within the description of the ratings. Note that these three ratings were also on the low end of the count in the number of *social* Topic Area categories within their self-described schemas (see Exhibit 14).

Within the *environment* Topic Area, we found 21 different concepts covered. These are listed in order of their frequency of use in the 14 ESG ratings methods evaluated in Exhibit 20. Of these 21,

17 were documented by multiple ratings. The most frequently included environmental concept documented in the published ratings schema – included in 13 of the 14 ratings – was "climate change." In some cases, this is simply listing GHG emissions as a data element. The next most frequently listed environmental concepts are "energy use/efficiency" and "environmental management"(ten ratings each), followed by "environmental emissions (non climate change)" and "environmental policy" in eight ratings each.

Exhibit 20
Number of Ratings Addressing Specific Environmental Issues

Environmental Issues	Number of Ratings
Climate Change	13
Energy Use/Efficiency	10
Environmental Management	
Environmental Emissions (non Climate Change)	8
Environmental Policy	
Water Use/Stress	7
Environmental Fines/Compliance	
Environmental Disclosure	
Environmental Liabilities	5
Renewable Energy	
Waste Production/Reduction	
Resource Management and Use	
Recycling	4
Environmental Spills	
Biodiversity/ Habitat	
Product Impacts / Ingredients	
Environmental Product Design	2
E Waste	1
Opportunities in Environmental Technology	
Opportunities in Green Building	
Packaging Material and Waste	

It appears that many of these ratings organizations consider traditional indicators of environmental performance (e.g., emissions, compliance, waste management), as well as metrics that speak to a company's ability to understand and effectively address its environmental issues, such as environmental management policies and programs. In addition, several ratings methods incorporate consideration of emerging environmental issues such as resource management and use, biodiversity/habitat protection, and the composition of and impacts in use of a firm's products. MSCI IVA had four unique concepts identified within its ratings description that we did not find documented in the other ratings, including "e-waste," "opportunities in environmental technology," "opportunities in green building," and "packaging material and waste."

Within the *social* Topic Area, we found 32 different concepts, as shown in Exhibit 21. The *social* Area runs the gamut from human rights and labor issues, to philanthropy and political accountability. Clearly, it is a wide range of topics and the level of detail is not nearly as fine as within the *environment* Topic Area.

"Diversity" is the most frequently mentioned social concept within these ratings, with twelve of the 14 documenting it as part of their schema. The next most frequently listed is "Employee Health and Safety." Human rights are a concept in 11 ratings. (For the purpose of this chart, we have characterized them into "policy" and "management" categories.) The full set of data used to develop these results may be found in Exhibit B-1 of Appendix B.

As can be seen in Exhibit 21, nine of the 32 concepts are present only in one ratings schema. MSCI IVA has seven unique concepts, and the Dow Jones Sustainability Index and KLD have one each. The rating with the most different social concepts within its schema is Pax World, followed by the GoodGuide, and CSR Hub (see Exhibit 19).

We also note here that the *governance* and *economic* Topic Areas show less diversity in the types of topics covered. *Governance* has only one topic and the *economic* Area has four. Exhibit 19 also makes very clear that the incorporation of neither governance nor economic indicators is central to these ratings, at least in terms of the public description of them.(As noted above, this analysis does not include primarily governance-focused research providers.) This also is shown in Exhibit B-1 in Appendix B. We should note, however, that Exhibit B-1 is a conceptual mapping, so within the

schemas themselves, ratings may have more diverse concepts grouped as economic or governance issues than are displayed in this table. Many of these topics have been moved to the *social* Topic Area within our analysis.

Exhibit 21
Number of Ratings Addressing Specific Social Issues

Social Issue	Number of Ratings	Social Issue	Number of Ratings
Diversity Issues	12	Employee Benefits	3
Employee Health and Safety	11	Political Accountability and Other Political Issues	
Philanthropy	9	Training	
Product Issues		Human Capital Issues	2
Human Rights Management	8	Negative Economic Impact of Company Actions	
Supply Chain		Oppressive Governments	
Human Rights Policy	7	Privacy Protection	
Brand management/Marketing and Advertising / Negative Images	6	Access to Communications	1
Bribery/Corruption Issues		Access to Finance	
Controversies		Access to Healthcare	
Community Involvement	5	Customer Management	
Labor Management Relations / Employee Relations		Insuring Health and Demographic Risk	
Anti-competitive Practices	4	Opportunities in Health and Nutrition	
Stakeholder Engagement		Raw Material Sourcing-Social	
Workplace		Responsible Investing	
Business Ethics	3	Workforce Reductions	

GRI Mapping

Over the last decade, the *de facto* worldwide standard for sustainability disclosure has become the Global Reporting Initiative (GRI). Mapping the ESG ratings schemas to the GRI structure is, however, limited by the amount and nature of publicly available information regarding the structure and mechanics of individual ESG ratings. Because the available detail does not always include the indicator level, in some cases it does not map cleanly to the GRI framework.

The summary count of mappings in Exhibit 22 shows that Environment data referenced in the GRI framework are much more likely than Social or Economic data to be referenced in a ratings schema among the 14 ratings we analyzed. In fact, Environment GRI sub-categories are nearly 50 percent more likely than the overall GRI sub-categories to be included in a ratings schema. Within the Social portion of GRI, Labor Practices topics are also referenced 50 percent more

Exhibit 22
Summary of Ratings Mapped to GRI

GRI Category/ Sub-category	Number of Possible Mappings	Number of Ratings Mapped	Actual to Possible Mappings Percentage
Economic	112	13	11 %
Environment	196	72	35 %
Social/Labor Practices	140	47	34 %
Social/Human Rights	168	35	21 %
Social/Society	140	21	15 %
Social/Product Responsibility	140	18	13 %
TOTAL GRI	**896**	**206**	**23 %**

often than the next closest area of Human Rights topics.

In Exhibit B-2 in Appendix B, we provide a detailed mapping of the ESG criteria used in the 14 ratings methodologies and the GRI criteria. The most frequently referenced portions of the GRI framework include Indirect Economic Impacts within the Economic section (mostly the incorporation of philanthropy by the ratings); Emissions, Effluent, and Waste within the Environment section; and Diversity and Equal Opportunity within the Social Labor Practices section.

The least frequently referenced portions of the GRI framework in these fourteen ratings schemas are policy, organizational responsibility, training, goals and performance, and management approach. These five elements are included as a component within each GRI category, or sub-category. Within Environment, Management Approach and Policy are the most frequently used (nine and eight ratings, respectively). Within the Social/Human Rights area, six reference policy and one references Management Approach. Reference to these five reporting concepts is even more sporadic in the other GRI Social Areas, and nonexistent in the Economic section. The absence of these GRI components within the documented ratings schemas does not mean that these elements of the GRI are ignored, but simply that this level of detail is not present in the public description of the ratings. Particularly within the *social* Topic Area, we found higher-level issue area descriptions used within the ratings schemas rather than the more detailed descriptions of environmental issues within the same schemas. The GRI framework takes this list of indicators (policy, organizational responsibility, etc.) and applies them across all the social areas: labor, human rights, society, and product. In so doing, it creates four additional policy indicators. Most of the ESG ratings do not document this much detail.

As shown in Exhibit 23, a limited number of GRI subcategories are used by a majority of the ESG ratings we analyzed. There is also a broader list of environmental topics than social topics used by a majority of ratings. Also, it is worth noting that within GRI, there are multiple indicators within the subcategories.

Exhibit 23
GRI Indicators Documented in More Than Half of ESG Ratings

GRI Categories	GRI Sub Categories	Number of ESG Ratings	Number of GRI Indicators in each Subcategory
Economic	Indirect Economic Impacts	11	2
Environment	Energy	10	5
	Emissions, Effluent, Waste	13	10
	Compliance	8	1
	Environmental Management Approach	9	1
Social	Labor Management Relations	8	2
	Occupational Health and Safety	10	4
	Diversity and Equal Opportunity	12	2

Perspective Provided by ESG Researchers

The process of developing ESG research and ratings products includes multiple layers of decision making—from high level sweeping design issues, to the seemingly trivial minutiae of how to define small aspects of each individual data element. The results of all of these decisions create the fabric of an individual rating. In discussions with ESG researchers, we found remarkable consistency in the challenges faced and the solutions available for addressing them. Certain industry factors may help to explain this phenomenon. It is a relatively small industry and many of the key research

players have been in the industry for many years. During this time, they have gotten to know their colleagues at other ESG firms quite well. There also is an occasional "musical chairs" aspect of who works where within the industry. In addition, shareholder activism creates a mechanism whereby firms collaborate in assisting their clients in engaging with portfolio companies, leading to regular interactions of at least some staff. As a result of these activities, the staffs from competing ESG firms often have extensive experience working together.

As described in the Methods section, all of the interviews conducted for this project were with seasoned veterans of the industry, most of whom have worked at multiple firms within the broad ESG market space.

ESG evaluation is all about assessing management quality, which raters believe is a key determinant of future financial outperformance.

Two fundamental questions we explored are what are these ratings trying to achieve? and, Have they been successful?

The interviews revealed a general consensus around the use of ESG ratings to determine the quality of a company's management. The specific metrics used in these ratings are ESG issues, but they then become a yardstick against which management performance can be measured. Some of this emphasis comes from the orientation of the researchers in supporting investment products. One interviewee spoke of a belief that these criteria lead to "better long term investments;" this is something of a standard belief within the industry. That does not mean that these researchers believe that there is necessarily a direct line between ESG evaluations and financial/investment performance, but simply that on the whole, evaluating the management of ESG issues is a good way to evaluate management capability and quality, and that this is a good basis for an investment premise. This "better investment" may be a result of better management of risk, or identification of companies that have specifically reduced their negative ESG aspects, or some other formulation, but the investment premise is that in evaluating a company's ESG factors, the analyst really is evaluating the firm's management. While many of the interviewees described other factors in terms of what the ratings are trying to accomplish, this focus on management quality was paramount.

For ESG ratings specifically designed for investors, there is always an undercurrent of needing good financial performance in determining whether the ratings have been successful. One interviewee identified it as "creating alpha," while another acknowledged that performance does not always live up to that goal. It is widely understood that portfolio construction and the work of the portfolio manager play major roles in ESG investment performance, and not just the ESG evaluations of companies. In fact, based on our interviews, attributing the specific financial performance of a portfolio to ESG issues is viewed by at least some of the interviewees as difficult to impossible.

The content and structure of ESG research and ratings methodologies has been heavily influenced by both materiality and values.

What motivated the firms who developed, launched, and continue to support these ratings to do so? Our interviewees suggested that financial materiality is a significant piece of what researchers have built into their methods. One interviewee phrased it as "trying to avoid issues that will be material." In other words, for the investors served by ratings firms, ESG evaluation can be a risk mitigation tool. Notably, this view of materiality segues into a second prevalent concern—the notion of sustainability of the planet and society. According to this view, corporate actions that

decrease the sustainability of the system externalize costs to society. It is a core belief for many ESG researchers and investors that companies should internalize the costs of these currently externalized issues. This is a statement of "values."

We also explored the role of "client values" as a motivating factor in the development of ratings. Our interviewees acknowledged that they live in the marketplace and have to provide products that speak to that marketplace. There appear to be two approaches used to product design. The first is to develop products (and underlying methodologies) that reflect the values of current or anticipated clients. This approach may be more widely used in custom client or separately managed account scenarios, but may also be present in off-the-shelf products (either mutual funds or research platforms). The second approach seeks to establish a "leadership" role whereby firms create ESG products with certain values embedded and then seeks to convince the marketplace to adopt these values. (This is the *Field of Dreams* approach to positioning an ESG product—"If you build it, they will come.") The reality is that for any given product, the ESG firms profiled here (and others) probably have clients/investors from both camps. Some clients use a product because it reflects their existing values, while for others, the product exposes them to new issues and new ways of thinking about investing.

ESG researchers are circumspect about adding new elements or issues to their existing ratings methodologies.

At their most basic level, decisions on changes in methodology or on adding new data concepts to ESG researchers' ratings hinge on the balancing of additional utility to the rating and the costs associated with adding new research.

Our interviewees identified three primary hurdles in seeking to add new data elements into their research processes. The primary challenges are availability of data across a broad enough universe, the level of effort and resources required to process the data, and appropriate expertise to handle the new data concepts.

Measures of utility within a rating's construct rely on a number of factors. Is the information by itself actionable? In other words, does the new data concept draw a bright line between groups of companies to determine which are investable (or more investable) and which are not? A related concept is whether the addition of a new data element changes the evaluation of a company. If a group of companies already fails criteria within the rating, additional information that reinforces this conclusion may be interesting, but does not add value to the process. In such instances, when the research methodology is used to drive toward decision-making, it is hard to justify additional research time to incorporate a new data concept. And finally, the number of companies affected by this new concept—as well as the availability of data across the potentially affected universe—plays a significant role in determining the utility of adding a new concept into the research methodology.

The GRI has been very helpful, but contains too many questions and imposes burdens on responding companies that may limit its uptake.

Because availability of information is such a significant determining factor of the ability of ESG researchers to do their work, we asked our interviewees about their impressions of the Global Reporting Initiative (GRI). They were supportive of the concept of GRI, and believe that it has substantially improved the ESG research space. But there was also widespread recognition that GRI may ask for too much and make it too difficult for companies to disclose important information. There also is widespread recognition that companies that report based on the GRI guidelines put

significant effort into generating these reports. One interviewee described the process as like the "Bataan Death March [for companies] to do a report." As a result, relatively small numbers of companies issue such reports compared to the universe of companies ESG researchers must evaluate. A number of people specifically said that they would happily trade fewer indicators for more universal reporting against a shorter list of indicators. The problem is that short of a regulatory mandate, there is no way to make such a cosmic trade. There also is a bit of a prisoners' dilemma, in that without universal agreement on a core set of information, each researcher is inclined to want, as much and as varied information as possible, both for completeness and to differentiate itself from competitors.

One interviewee also pointed out the nearly complete lack of disclosure by private companies, which may operate in the same industries and in the supply chains of the companies ESG firms do evaluate. He noted that ESG researchers increasingly need information about such companies. The sustainability of supply chains of public companies, which often include privately held companies, is increasingly of concern to investors.

Companies should disclose more (or begin to disclose), even if they have not developed all the answers.

What can companies do to increase the value of their disclosure, both for internal and external audiences? One interviewee advised that companies really think through their sustainability risks and worst-case scenarios, concluding, "If you think it could happen, some shareholder has thought of it, so keeping quiet about your plans doesn't make sense." Another interviewee followed up by saying that an overall increase in the amount of time and attention devoted to ESG issues in traditional investment analyst calls will increase the understanding that these analysts have of these issues; companies with a good story should seek to position themselves on these issues within the mainstream financial community. An additional set of recommendations had to do with planning around specific disclosure mechanics. First, "initial disclosure is most important," so companies should take the plunge and report even if the effort does not fully meet GRI guidelines. In addition, the raters suggested getting to multi-year disclosure on certain data concepts, and that by including actual numbers along with or instead of using a solely graphical presentation, a company increases the ability of those reading its reports to do appropriate analysis.

Conclusions: ESG Rating Methods and Analysis

ESG ratings are structured differently from one another, as is evident from examining even the highest category level descriptions. However, in spite of these differences, there are also a number of significant similarities that emerge as we examine the more detailed mappings.

- There is unanimity in the inclusion of social as well as environmental issues within the ratings. Economic and governance issues are incorporated less consistently.[7]

- There is near unanimity in the importance of highlighting climate change as an issue within the published ratings schemas.

[7] We recognize that we set out with the objective of analyzing broad-based ESG ratings rather than narrowly focused issue ratings, so this conclusion is really not surprising, but we also covered most of the well known research firms in this market space, so the finding is meaningful.

- While social issues are the most varied among the ratings, there is consistent coverage of human rights issues (though they may fall under different headings in the ratings-specific schemas).

- Diversity and Employee Health and Safety are important issues covered by a large majority of the ratings.

- Particularly within the *environment* Topic Area, a performance approach as a component of the ratings evaluations is universally present.

- The mappings of ESG ratings to the GRI framework indicate that GRI is an important source for raters in the cases in which companies issue a GRI report. At the same time, however, there may be an indication that all of the breadth of issues and indicators incorporated into the GRI guidelines is not needed by the ESG ratings community and may even be detrimental to gaining broad-based corporate disclosure. Before definitively reaching this conclusion, however, a full analysis of which GRI indicators are regularly disclosed by companies would help inform any judgments about whether we are looking at a supply or a demand issue.

Regardless of the specific ESG criteria considered or the type(s) of evaluation methodology applied, our interviews suggest that the fundamental goal of ESG research and analysis is to form a judgment about the management quality of each company. Management quality is widely viewed as a key determinant of future financial performance. In pursuing this goal most ratings methodologies embody a content and structure that has been heavily influenced by both materiality and values. That is, ESG researchers are in the business of performing a qualitative assessment based upon both hard data and normative evaluations of the extent to which it can be trusted to do the right thing. Moreover, while they are informed by empirical data, these judgments are far from precise. Therefore, ESG researchers prefer to have data addressing a particular issue in several different forms, so that they can evaluate a particular company or industry from several different angles when examining a particular aspect of its current posture, recent performance, and future prospects. Also, because many publicly traded companies disclose little or no meaningful ESG data, researchers and analysts may have a tendency to request more information whenever and wherever they believe that they can get it.

Section 5: Common Ground Between Corporations and ESG Researchers

This section presents an examination of how the information sought, developed, and used by corporate decision makers and researchers and investors shares certain common aspects, but also differs in some respects.

Issues Mapping

This section presents a series of tables that show the degree of overlap between the issues most often evaluated by ESG researchers and investors and the corporate EHS/sustainability metrics most often tracked by NAEM survey respondents; the extent to which the EHS and broader ESG information tracked by leading companies is or might be of interest to researchers and investors; and the means and degree of public disclosure of corporate information on the topics of interest to these stakeholders.

Exhibit 24 matches the issues being evaluated by members of the ESG research/investor community, and those being tracked within leading companies. This table shows, for each issue, the number of the 14 ESG evaluation methods we have identified and examined that consider the issue, compared to the percentage of respondents to the NAEM survey that track the issue. We note here that the way in which each issue is defined by most ESG researchers and the specific sustainability issue addressed in the NAEM survey are not congruent in some cases, and we have made our comparison on the basis of the best fit. For clarity, the exhibit provides the specific survey metric used as the basis of comparison.

The results indicate the extent of alignment between the ESG researcher/investor and corporate perspectives regarding which issues are important and worthy of attention. We find that there are 28 such issues, mostly in the Environmental category, with a smaller number from the Social category. The data show generally good agreement concerning which EHS/sustainability issues are "important," from both perspectives. Most of the EHS and social issues that are most commonly examined by ESG researchers and rating organizations also are routinely tracked by a majority of companies. Examples of such issues (and accompanying metrics) include climate change, energy use/efficiency, environmental management practices, environmental emissions, supply chain performance, water use/stress and fines/compliance on the environmental side, and diversity, employee health and safety, and philanthropy on the social side.

Exhibit 24
Overlap of Key Metrics of Interest to ESG Researchers/Investors and Corporate Decision Makers

E&S Issue	ESG Researchers Evaluating the Issue (of 14)	Percentage of NAEM Survey Companies Tracking the Issue	Metric as Defined in NAEM Survey
Climate Change	13	88%	GHG Emissions
Diversity Issues	12	81%	Employee Diversity
Employee Health and Safety	11	100%	Lost Day Injuries
Energy Use/Efficiency	10	93%	Energy Use
Environmental Management	10	81%	EHS Management Systems
Product Issues	9	50%	Product Compliance with Customer Requirements
Philanthropy	9	86%	Philanthropy/Charitable Causes
Environment Emissions (non Climate Change)	8	69%	TRI Emissions
Supply Chain	8	58%	Supply Chain Performance
Water Use/Stress	7	86%	Water Use
Environmental Fines/Compliance	7	96%	Fines and Penalties
Environmental Liabilities	5	80%	Environmental Remediation Costs
Renewable Energy	5	63%	Renewable Energy Use
Waste Production/Reduction	5	88%	Non-Hazardous Waste
Community Involvement	5	66%	Community Investment
Resource Management and Use	5	42%	Raw material use
Recycling	4	68%	Resource Conservation/ Recovery (paper)
Workplace	4	36%	Ergonomics Projects/Initiatives
Environmental Spills	4	84%	Spills and Releases
Stakeholder Engagement	4	44%	Stakeholder Engagement
Training	3	82%	Employee Training
Environmental Product Design	2	50%	Product Innovations or Sustainability-related Services
E-Waste	1	43%	End-of-Life Electronics
Opportunities in Environmental Technology	1	37%	Sustainability-related Research and Development
Opportunities in Green Building	1	49%	Investments in EHS/Sustainability-related Capital Improvements
Packaging Material and Waste	1	47%	Resource Conservation/ Recovery (packaging)
Product Ingredients	1	42%	Raw material Use
Customer Management	1	27%	Customer/Consumer Education

Another, though more limited, perspective on the degree of overlap in the interests and activities of the corporate EHS profession and those of the ESG researcher/ investor community may be obtained by considering which issues of evident interest to the latter are not addressed in the survey performed by the former. In Exhibit 25, we list the issues of apparent interest to ESG researchers and evaluators, as shown in Exhibits 20 and 21, that were *not* included in the NAEM member survey. As shown here, only three of the 21 environmental issues we have identified as being of interest to at least some ESG researchers (environmental policy, environmental disclosure, and biodiversity) were not included. Half or more of the ESG ratings descriptions we reviewed and processed explicitly mentioned the first two of these three issues. It is worthy of note, however, that these issues, by their nature, do not lend themselves to the objectives of and methods employed in developing the NAEM survey.

Exhibit 25
ESG Issues/Metrics Not Addressed in the NAEM Survey

Category	Issue/Metric	ESG Methods Assessing Issue/Metric
Environmental	Environmental Policy	8
	Environmental Disclosure	7
	Biodiversity	4
Social	Human Rights Management	7
	Human Rights Policy	7
	Bribery/Corruption Issues	6
	Brand management/Marketing and Advertising	6
	Controversies	6
	Labor Management Relations	5
	Anti-competitive Practices	4
	Business Ethics	3
	Employee Benefits	3
	Political Accountability and other Political Issues	3
	Human Capital Issues	2
	Negative Economic Impact of Company Actions	2
	Privacy Protection	2
	Oppressive Governments	2
	Access to Communications	1
	Access to Finance	1
	Access to Healthcare	1
	Insuring Health and Demographic Risk	1
	Opportunities in Health and Nutrition	1
	Raw Material Sourcing-Social	1
	Responsible Investing	1
	Workforce Reductions	1
Governance	Corporate Governance (Traditional)	10
Economic/ Financial	Financial Performance	2
	Taxes	1
	Financial System Instability	1
	Research and Development	1

Coverage within the NAEM survey is much less complete for the 32 social issues listed in Exhibit 21. Of these, the NAEM survey included only ten. This survey also did not address corporate governance issues in its design, which are explicitly evaluated in ten of the 14 ESG methods we have evaluated, or any of the four indicators of economic/financial posture and performance used within one or two of these methods. A reasonable, though unexplored, explanation for this result is that most of these issues are not within the functional responsibilities of most respondents to the NAEM survey (EHS professionals). They are far more likely to be managed (and tracked) within human resources, legal, finance, investor relations, corporate secretary, or other business functions.

Returning to the issue of which issues are amenable to comparison based upon available information, the data provided in Exhibit 25 show that there are a substantial number of additional ESG issues that appear to the subject of greater focus within companies than the ESG researcher

community. For most of the issues listed in Exhibit 25, a substantially greater percentage of NAEM survey respondent companies track the issue than the corresponding number of the ESG research/rating methods explicitly addressing the issue, based on publicly available data. This difference, in which a significant percentage of surveyed companies track an issue that appears to be considered in only relatively few ESG rating methods, applies both to well-known EHS metrics such as spills and releases and environmental liabilities as well as to a substantial number of emerging issues. In theory, these emerging issues should be of interest to both corporate executives and investors, because they suggest investments in the company, its people, or its stakeholders (e.g., training, stakeholder engagement); opportunities for cost savings (e.g., waste management and recycling); risk mitigation possibilities; or in potential new products and services and/or competitive advantage (e.g., investments in sustainability-related capital improvements or research and development). In short, many if not most of the companies in the NAEM survey sample are tracking a number of metrics that arguably should be considered by investment-oriented ESG research and rating organizations, but are not. Although it is possible that ESG researchers and investors do evaluate these issues, there is no publicly available information indicating that they are, and it is clear that these issues are not among the major themes that these organizations have defined to describe their evaluation philosophies and methods (see Exhibit 14).

One possible issue that could inhibit interest in the use of corporate information by ESG researchers and investors is the issue of comparability. ESG researchers focus on developing comparable data on large numbers of companies. Historically, developing such consistent and comparable data on the ESG characteristics of large numbers of companies has been quite difficult, particularly for issues and metrics not addressed by mandated disclosure requirements. Moreover, given the long-standing concerns addressed by many observers that a great many corporate environmental, EHS, sustainability, and CSR reports lack depth and meaningful content, it is not irrational for external evaluators of ESG data to question the representativeness and therefore, the utility, of whatever corporate data on ESG indicators, particularly leading indicators, that they may encounter. (A contrasting view is that such comparable data represents the lowest common denominator and may not be the best indicator for any particular company.) A related but distinct point is that many companies take an anecdotal approach of providing examples and stories, without providing any contextual information that enables the reader or viewer to understand whether these successes are typical and represent normal conditions within the company. Such stories provide little insight into whether and to what extent the firm and its senior management understand and are appropriately addressing all the important ESG issues and are collecting, using, and reporting EHS/sustainability information company-wide.

Exhibit 26 provides a list of the corporate E&S metrics that are of interest to ESG researchers and investors organized by the percentage of companies tracking these issues across their entire span of company operations (national or global). A significant percentage of responding companies track and use metrics across all national/global operations. Metrics that are developed nationally/globally by half or more of the NAEM survey respondents include many traditional indicators of EHS performance, such as waste generation, spills, greenhouse gas emissions, compliance, and employee health and safety, as well as a number of prominent social issues such as philanthropy, workplace issues, stakeholder engagement, and community involvement. More than half of the NAEM survey respondents tracking such issues also develop national/global-scope data for a number of emerging sustainability management issues, such as environmental product design, use of renewable energy, and opportunities in environmental technology. These results suggest that many companies are now developing and using a wide array of ESG data (or at least EHS and some social issue data) of a scope and scale that one could expect would accurately portray their

posture and recent performance. Such data could then be perceived as reasonably representative and comparable, and therefore of direct interest to investors and other external stakeholders.

Exhibit 26
Breadth of Application of Corporate E&S Metrics

Percentage of NAEM Respondents Tracking the Issue that Develop Results on a Global Basis	E&S Issue
71 – 80%	Renewable Energy, Product Issues, Employee Health and Safety
61 – 70%	Energy Use/Efficiency, Environmental Product Design, Opportunities in Environmental Technology, Environmental management, Climate Change, Resource Management and Use, Product Ingredients, Water Use/Stress, Community Involvement, Recycling, Packaging Material and Waste, Environmental Liabilities, Stakeholder Engagement, Environmental Fines/Compliance
51 – 60%	E-Waste, Workplace, Waste Production/Reduction, Philanthropy, Environmental Spills, Supply Chain, Opportunities in Green Building, Training
41 – 50%	Diversity Issues, Customer Management
31 – 40%	Environmental Emissions (non Climate Change)

Another piece of the puzzle has to do with whether and to what extent companies are effectively communicating their activities and accomplishments to ESG researchers/investors and other stakeholders on these issues. As discussed above, the great majority of the firms included in the NAEM survey report or voluntarily disclose a substantial number of E&S metrics, though in many cases, they also track additional data that are not released for external consumption. The question then arises as to whether the information released by companies corresponds well to the data collection priorities of ESG researchers, or otherwise. Exhibit 27 provides details on the extent to which respondents to the NAEM survey publicly disclose each of the 28 E&S metrics included in the survey that are of apparent interest to ESG researchers and investors. These data are listed in order of the total percentage of respondents tracking a particular issue that disclose, through either public reporting (e.g., on the company web site or a stand-alone CSR or sustainability report) or in response to external requests for information.

Exhibit 27
Reporting and Broader Disclosure of Key E&S Metrics

Issue	Percentage of ESG Researchers Evaluating Issue	Percentage of Responding NAEM Survey Companies Tracking the Issue	Percentage of NAEM Survey Respondents Tracking the Issue			Percentage of All NAEM Survey Respondents Disclosing Information
			Publicly Reporting	Disclosing on Request	Total Disclosing Information	
Climate Change	93%	88%	77%	10%	87%	76%
Employee Health and Safety	79%	100%	65%	23%	87%	87%
Renewable Energy	36%	63%	65%	20%	85%	53%
Energy Use/Efficiency	71%	93%	73%	11%	83%	78%
Environment Emissions (non-Climate Change)	57%	69%	65%	17%	83%	56%
Philanthropy	64%	86%	70%	9%	79%	67%
Community Involvement	36%	66%	62%	16%	78%	51%
Water Use/Stress	50%	86%	61%	17%	78%	67%
Waste Production/Reduction	36%	88%	64%	12%	76%	67%
E-Waste	7%	43%	30%	41%	70%	29%
Packaging Material and Waste	7%	47%	40%	27%	67%	31%
Environmental management	71%	81%	53%	12%	65%	52%
Customer Management	7%	27%	43%	21%	64%	17%
Recycling	29%	68%	36%	27%	64%	42%
Environmental Product Design	14%	50%	50%	13%	63%	32%
Environmental Fines/Compliance	50%	96%	49%	13%	62%	60%
Opportunities in Green Building	7%	49%	38%	24%	62%	30%
Diversity Issues	86%	81%	49%	13%	62%	50%
Stakeholder Engagement	29%	44%	35%	22%	57%	24%
Environmental Spills	29%	84%	30%	23%	53%	44%
Environmental Liabilities	36%	80%	39%	12%	51%	40%
Opportunities in Environmental Technology	7%	37%	32%	18%	50%	18%
Resource Management and Use	36%	42%	32%	14%	46%	19%
Product Ingredients	7%	42%	32%	14%	46%	19%
Supply Chain	57%	58%	31%	9%	40%	23%
Training	21%	82%	14%	14%	27%	22%
Workplace	29%	36%	5%	18%	23%	8%
Product Issues	64%	50%	7%	14%	21%	10%

The table also provides the percentage of NAEM survey respondents that track the issue (as shown in Exhibit 24, above), the percentage of all 72 NAEM survey respondents disclosing the information, and the percentage of ESG research/rating organizations that publicly state that they address the issue corresponding to the metric. In other words, this table provides us with some insight regarding the extent to which companies are making information available that is responsive to the needs of the ESG research/investing community, as well as the extent to which companies are

tracking and making available sustainability-related metrics that they believe are material that relatively few ESG researchers appear to be interested in, based upon publicly available information on ESG rating methods.

In all but three cases (climate change, diversity, and product issues) a higher percentage of NAEM survey respondents track the issue than the percentage of ESG research/rating methods examined here that address the same issue. The same relationship holds with respect to disclosure, as a higher percentage of responding firms that track the issue either report or disclose the metrics on request than the analogous percentage of ESG analysis methods appear to make use of the information. Exceptions to this general rule are limited to diversity, supply chain, workplace, and product issues. With that said, when the disclosure percentage is adjusted to account for the percentage of NAEM survey respondents that track the issue (shown in the right-hand column), this pattern weakens somewhat.

A number of more detailed observations also may be made by reviewing the data in this table:

- For a number of prominent and familiar EHS/sustainability metrics, there is very good correlation between expressed interest by the ESG researcher community, tracking by companies, and public disclosure. Metrics falling into this category include climate change/GHG emissions, employee health and safety, energy use/efficiency, pollutant emissions, philanthropy, and water use/stress. This suggests a general recognition on all sides that these issues are important both to the company and to a variety of stakeholders, including investors and ESG researchers and analysts.

- There also are a number of metrics disclosed that, based upon publicly available information, do not appear to be of interest to a majority of the ESG researchers and investors. Metrics made available by two-thirds or more of the responding companies tracking them but of apparent interest to less than half of the ESG rating organizations include use of renewable energy, community involvement, waste production/reduction, e-waste, and packaging material and waste (the latter two metrics are tracked by fewer than half of all NAEM survey respondents).

- Several additional metrics are made publicly available by half or more of the NAEM survey respondent companies tracking them, but are of apparent interest to less than one in three of the ESG researchers/investors profiled in this study. Examples include customer management, recycling, environmental product design, opportunities in green building, stakeholder engagement, environmental spills, environmental liabilities, and opportunities in environmental technology. Of these, however, customer management, opportunities in green building, stakeholder engagement, and opportunities in environmental technology are tracked by half or less of the NAEM survey respondents.

The metrics in these latter two groups may be of primary interest to stakeholders other than investors and the analysts that serve them (e.g., major customers), reflect issues that are believed to have some substantial environmental or organizational importance but limited implications for future cash flow generation or investment risk, or be of interest to some ESG researchers and analysts but for others, be outside of their current analysis/valuation paradigm.

- In contrast, there are several issues that are relevant to half or more of the ESG research methodologies examined here but are disclosed by less than two-thirds of the NAEM survey

respondents tracking them. These include environmental management, diversity, supply chain, and product issues. These may be examples of emerging, more integrative concepts that are increasingly the focus of sophisticated approaches to ESG-informed valuation analysis that more companies may want to consider tracking and reporting in the future. This possible explanation finds some support in the interviews we conducted with corporate EHS managers and ESG researchers, as discussed previously.

- Several metrics are commonly reported by the NAEM survey firms that track them, but are not as widely tracked as many others by the members of this group of companies. As a result, the overall percentage of firms in this sample that report or voluntarily disclose their performance according to these metrics is markedly lower than what would be indicated by simply considering the disclosure percentage as a function of those tracking the issue. Examples of metrics in this category include e-waste, packaging material and waste, customer management, environmental product design, opportunities in green building, stakeholder engagement, opportunities in environmental technology, resource management and use, product ingredients, workplace issues, and product issues.

- Finally, for each of the 28 metrics listed in the table, more than a few NAEM survey respondents have chosen to make their data available in response to external requests rather than publicly reporting them. In most cases, a substantially higher percentage of survey respondents tracking the metric report the data than disclose on request, though there are some notable exceptions, including e-waste, workplace, and product issues. More generally, for all but four of these metrics, between 10 and 30 percent of survey respondents tracking the issue disclose on request rather than reporting of their own volition. This suggests that at least some of the concern about "survey fatigue" expressed by corporate representatives might be alleviated if more companies were to publicly report more of the EHS/sustainability that they already have in their possession.

Conclusions: Evaluation of Commonalities and Differences

The issues of interest to ESG researchers that also are tracked and managed within many leading corporations show a striking degree of overlap. More than 20 distinct issues (mostly environmental, with some social) are explicitly considered in at least one ESG rating and also tracked by at least 27 percent of the 72 firms in the NAEM survey. Many companies now develop and E&S metrics on a global basis, making them more meaningful and useful to, among other audiences, ESG researchers and investors. Many of these metrics also are being reported or disclosed on request by substantial percentages of companies. We caution, however, that the companies represented in the NAEM survey sample may represent the higher end of the distribution in terms of ESG management sophistication and maturity. Although this means that other companies may not have a similar depth and breadth of ESG reporting, it also may mean that the NAEM companies represent corporate leadership in this area and that broader and deeper ESG reporting will be more common in the future.

The demonstrated overlap between the internal management interests of these leadership companies and the information sought by ESG researchers to construct their ratings should serve as a wake-up call

to companies that are not yet disclosing substantial ESG information to their investors and other stakeholders.

With that said, the same survey results show that relatively few companies, even in this leadership group, report or disclose all of their ESG data, and that many report partial information and release other elements only upon request. This suggests that routine reporting of whatever data the firm is willing to disclose upon request might reduce some survey fatigue. Senior executives in those firms disclosing little or none of their ESG data may wish to consider that ESG researchers are rendering judgments about the quality of their management on an ongoing basis using limited empirical data.[8] It would be in everyone's interests if such judgments were made on the basis of all pertinent and ascertainable facts.

[8] In the absence of disclosure by a company, many ESG researchers have developed and apply ratings models that either explicitly evaluate and score disclosure as a factor, or accept the influence that disclosure (or the lack of disclosure) has on the ratings results as a practical reality in assembling the rating. For example, within an industry in which the basic structure of two firms is similar, all other things being equal, is a company (or its management) better if it discloses total energy use? And if the rating is designed to evaluate the performance level of total energy use, how does one rate a company that does not disclose the information against other companies that do disclose this metric? The process of constructing a ratings methodology requires one to answer questions at this level and in roughly this format. For many ratings, this operating paradigm can be summarized, "The lack of data is a significant data element."

Section 6: Conclusions and Implications

We discuss here the conclusions we draw from the research presented above, and its implications for those involved in both corporate sustainability and ESG research and analysis.

Conclusions

Based on the evidence we have collected, we reach the following overall conclusions:

1. **There is general agreement about what the important corporate sustainability issues are, but not on why or how company ESG data should be used.**

   - **Increasingly, corporate managers and ESG researchers/investors believe that the same ESG issues are important, but may track them at different levels of detail.**

     The issues of interest to ESG researchers that also are tracked and managed within many leading corporations feature a striking degree of overlap, with more than 20 distinct issues (mostly environmental, with some social) of clear interest to both communities. Many companies now develop and use ESG metrics on a global basis, making them more meaningful and useful to ESG researchers and investors, as well as other audiences.

     Few companies appear to develop new or modify existing metrics specifically for distribution to external audiences. Part of the "disconnect" between the corporate and ESG researcher perspectives can be explained by the differences in information needs common to these two audiences. These differences often arise because of one or more of the following:

     - External interest in an issue that changes infrequently (e.g., corporate policies)
     - A finer granularity requested by a particular entity or group of stakeholders (e.g., global versus product- or location-specific information)
     - An interest by the firm in engaging with a particular stakeholder or group (e.g., host communities, potential employees), or
     - A difference in preferred/useable data format or units rather than scope of coverage.

     This finding validates one of the potential causal factors of the "disconnect" we posited at the outset of our research, as discussed above in the Background and Context section. It also helps to explain how, in the aggregate, ESG researchers may have an interest in compiling many more individual ESG indicators than are tracked by a typical company. ESG research firms service a number of diverse client and end user constituencies, each of which may have different information needs. Indeed, ESG researchers routinely collect all the information that they can find on a particular company, including data that are not routinely tracked by companies or monitored by senior management. We believe that such

differences and distinctions may be more common than any disagreements regarding which ESG issues are important and which are not.

- **Corporate ESG metrics and approaches to managing to them are based on business fundamentals.**

  Development and use of corporate ESG metrics is an established, business-driven activity in many advanced large companies. Such firms typically populate and track 35 or more metrics across traditional EHS domains such as emissions, waste, health and safety, and compliance, as well as more business-oriented endpoints such as resource consumption/ conservation and extent and effectiveness of management programs. The primary purpose for tracking most of these metrics is internal accountability for one or more business goals, though stakeholder concerns also may influence metrics selection and disclosure. More often than not, results are reported at regular intervals to company senior management.

  Corporate ESG metrics development and use is primarily driven by consideration of benefits and costs, important stakeholder expectations, and opportunities for impact. Firm-level metrics nearly always include a core of traditional endpoints, but have evolved in recent years to often include indicators of management practices and social issues, and also have frequently expanded outside the "four walls" of the organization to address company supply chains and products in use after sale. In parallel, many companies are developing and deploying new or additional organizational structures to provide the cross-functional knowledge needed to address this larger and more complex set of issues.

- **Disclosure of ESG metrics is very uneven.**

  Many ESG metrics are either routinely reported or disclosed on request by substantial percentages of companies. Very few firms, however, report all of their information. The leadership shown by the firms included in this study stands in marked contrast to that of the broader population of U.S. companies, which reports far fewer metrics, with large numbers of firms reporting none at all. The substantial overlap demonstrated in this report between the internal management interests of leadership firms and the information sought by ESG researchers to construct their ratings should serve as a wake-up call to companies that are not yet disclosing substantial ESG information to their investors or other stakeholders.

  With that said, our results show that relatively few companies, even in this leadership group, report or disclose all of their ESG data, and that many report some and release other elements only upon request. This suggests that routine reporting of whatever data the firm has that it is willing to disclose upon request might incrementally reduce some survey fatigue. Senior executives in those firms disclosing little or none of their ESG data may wish to consider that ESG researchers are rendering judgments about the quality of their management on an ongoing basis using limited empirical data. It would be in everyone's interests if such judgments were made on the basis of all pertinent and ascertainable facts.

- **ESG researchers are concerned both with corporate accountability and with predicting the future.**

  ESG researchers use corporate ESG data to make judgments about the management quality of companies. This is because management quality is widely believed to be a key determinant of future financial performance. What distinguishes ESG researchers from other analysts, however, is that their assessment of management is heavily influenced by considerations of both materiality and values. ESG researchers perform a qualitative assessment of each firm based upon both hard data and normative evaluations of the extent to which a company, and its senior management, can be trusted to do the "right thing." The definition of "the right thing" varies somewhat by ESG research provider, and is determined by its values. These values, in turn, are embedded in the end product(s) the research firm puts into the marketplace. The qualitative assessments are informed by ESG data, with each researcher using its own formal or informal methodology.

  Because these methods are as much art as science, researchers may prefer to have data addressing a particular ESG issue in several different forms, so that they can evaluate a particular company or industry from several different angles. As a consequence, ESG researchers collect (and some request) vast amounts of quantitative and contextual data, gathering up nearly anything available in their quest to determine which firms are behaving as they expect and which are led by management teams that should enable them to outperform their competitors in the future. This helps to explain why ESG researchers often collect many times more specific metrics than are typically tracked by companies.

2. The evidence suggests that both corporate executives and ESG researchers/ investors approach ESG issues primarily from a risk mitigation perspective rather than a value creation perspective.

- **Most specific indicators used by both senior corporate managers and ESG investors focus on identifying negative attributes or downside behavior, or in other words—risk.**

  While risk and opportunity are often two sides of the same coin, there is little question that the categories, issues, and specific metrics identified by both companies and ESG raters are primarily viewed as risk factors that can adversely affect corporate financial performance. Issues like climate change and human rights are easily cast as issues of risk because their most direct implications include potential adverse effects on company assets, customer attitudes and behaviors, and other factors that affect financial success.

  We note that there may not be a direct line between a specific behavior and a financial downside. That is the nature of risk—it reflects not a certainty of specific events occurring, but rather the possibility of those events taking place. In addition, the severity of the downside risk for many ESG issues may be much more significant than the potential of an upside for the same issues. This asymmetry reinforces the tendency of both corporate executives and ESG researchers/investors to view ESG issues from a negative, defensive, risk management perspective.

- **While both corporate senior managers and ESG researchers/investors are interested in the potential for ESG-related financial value creation, their interactions are generally devoid of information speaking directly to this crucial issue.**

  We found little evidence in conducting this study that many companies are taking a strategic approach to defining their ESG metrics, or using the resulting information to inform business strategy, identify new opportunities for revenue growth, or otherwise drive improved corporate-level financial results. To the extent that improved ESG/sustainability performance is being reported by firms, the companies are not quantifying, or in most cases even identifying, its impact on the corporate "bottom line."

  Although most ESG researchers and investors posit a direct correlation between improved corporate sustainability performance and value creation, the linkages between the state of and changes in corporate governance practices, management of environmental, health and safety, and social issues, and effective financial management on the one hand and the prospects for superior performance on the other remain almost entirely unstated by these entities. Although some ESG investors claim to have developed methods to perform such calculations, at a general level, the specific variables and functional form of any such methods remain unclear to most observers.

  Because these linkages are complex and vary substantially by industry and company, it is difficult for the ESG research/investor community to articulate them in any depth without gaining substantially greater understanding of internal company operations, based upon access to appropriate data. As it stands now, because researchers do not request information on how the firm creates new financial value through its management of ESG issues, they do not receive it.[9]

  Additionally, value creation for the investor occurs at the portfolio level, not at the individual firm level. The risk/reward calculations, therefore, are conducted in a very different manner by investors than by company executives. Thus, while in theory both sides would like the discussion on key ESG metrics to shift to a more value-creation focus, companies are not currently leading the way and investors have different incentives to shift to this focus.

3. Future improvements will require greater clarity and more effective and consistent communication between companies, researchers, and the consumers of ratings.

[9] Anecdotally, one of this study's authors works as an ESG researcher and has sought disclosure of this kind of information in the past, which was not forthcoming as a result. As we have discussed in this study, merely requesting data does not make it available.

- **Substantial, non-incremental progress depends on clear articulation, from both companies and ESG raters, of corporate financial value creation through advancements in managing ESG issues and their results.**

  Both companies and researchers/investors seek to create financial value. Yet most companies, even those that are leaders in the tracking, use, and external reporting of ESG metrics, stop short of developing a coherent explanation of how pursuing ESG improvements produces opportunities for future growth, stability, and profitability. Their value proposition for sustainability, or even corporate social responsibility, remains unclear and unarticulated. Corporate sustainability reports, analyst calls, investor "road shows," and other communications with investors, ESG and other analysts, and external stakeholders rarely feature much discussion of how ESG issues affect the business, though there are certain notable exceptions (a few of which are described in this report). Even in cases in which the firm and its senior management understand many of the connections between its ESG profile and activities and its operational and financial risks, revenue generation potential, and profitability, these connections are almost never articulated. If companies would provide a clear and compelling explanation of what they are doing to address (or not address) specific ESG issues and what effects these activities would induce on these types of outcomes, along with appropriate supporting data, this more limited disclosure would very likely satisfy the needs of most ESG researchers and investors.

  Similarly, ESG researchers and investors should be much more specific and forthcoming about their evaluation theses, and the extent to which they posit a formal or informal relationship between corporate ESG posture and performance and long-term investment returns. They should articulate not only the factors that they believe are most important, but specifically how these factors will influence the firm's future opportunities and investment risks. (Ironically, doing so would put ESG researchers/raters in the position of being more forthcoming about their investment theses than many "mainstream" investors.) If, on the other hand, their focus remains on predicting future corporate success by evaluating management quality, they should be more transparent about the qualitative judgments they make and their basis, and consider whether they could reach the same conclusions using fewer ESG indicators.

  Moreover, fully implementing investment analysis into ESG evaluation (or vice versa) is at the essence of the "ESG mainstreaming" that is a primary goal of the Principles for Responsible Investment (PRI)[10] and other efforts to bridge the worlds of organizational sustainability and investment.

  Accordingly, it is clear where most participants in the dialog want to go, but getting there will require development of the conceptual and empirical information needed to create

[10] The Principles for Responsible Investment (PRI) is an initiative of the United Nations Environment Programme and a number of global financial institutions, and is an attempt to increase the participation of financial institutions in the process of embedding corporate social responsibility into mainstream investing. See http://www.unpri.org/ for details.

greater shared understanding of the sources of value that may accrue to a company by improving its ESG position, practices, and performance.

- **Typical ESG metrics reporting practices and guidelines have advanced, but also have had some unintended and unfortunate consequences.**

  It is clear that there is considerable agreement regarding the types of ESG issues that are of interest. Both corporate EHS and ESG research professionals are generally supportive of the need for sustainability reporting guidelines, and specifically, the Global Reporting Initiative (GRI).

  That said, the amount and types of ESG information sought by different stakeholders are inconsistent and may create unnecessary reporting burdens.

  ESG researchers are reluctant to scale back the scope of their inquiries (and data requests) in part because reporting and disclosure across U.S. industry is, notwithstanding the firms included in the NAEM survey, at best uneven, at worst, sparse. In essence, ESG researchers have tended to collect/request any and all ESG information that they can obtain. Moreover, because this information is generally used and considered in a judgment-based evaluation, having more information, and being able to examine an issue from more different angles, is viewed as desirable. To be persuaded to accept a smaller, more focused set of information, ESG researchers will need to be able to reach the same types of conclusions and judgments about companies as they do now. The use of fewer data elements also may necessitate a somewhat different evaluation mechanism. This is likely to be challenging if the primary goal continues to be evaluation of management quality, unless and until someone demonstrates that this attribute can be surmised from a smaller set of data elements.

  For their part, corporate EHS and other professionals may be reluctant to report or disclose additional ESG data (even though, as shown in this report, such data often exist) in the absence of a better understanding of how the data will be used. More specifically, corporate audiences want more clarity on how their ESG data are to be fed or translated into a meaningful evaluation of either management quality or quantitative analysis (discounted cash flow analysis or equivalent).

- **More widespread and consistent disclosure will probably involve a trade-off on having fewer indicators.**

  Requests made by external parties for corporate ESG information appear to place a highly variable burden on corporations and their EHS staffs. Some firms receive dozens of requests annually, and may need to devote substantial staff time to appropriately respond. Others receive far fewer requests and do not expend significant resources in addressing them. In either case, the most important factors in deciding whether and how to respond are related to customer needs and preferences, rather than responsiveness to lenders, investors, or other financial stakeholders. To the extent that companies are experiencing "survey burnout" it is clear that the root cause extends beyond the investor-focused ESG

researcher community and its information needs, simply by virtue of the fact that it accounts for only a fraction of the 40 or more annual information requests received by some companies.[11] This also means that, in such cases, most of the information requests are directly related to revenue creation (or preservation) opportunities for the companies receiving these requests.

Interestingly, while GRI reports are an important source of information for ESG researchers, there is relatively limited overlap between the GRI criteria and reporting elements and the structure of the ESG ratings methods. None of the methods explicitly makes use of a majority of the reporting elements, and many of them include issues that are not addressed in the GRI guidelines. This suggests that the GRI guidelines contain a breadth of issues and indicators that is not used by the ESG ratings community. There are two potential explanations for this. First, the data may not be useful. Second, it may be disclosed by so few companies that ESG researchers do not use it because of a lack of comparability.

Both corporate and ESG researcher/investor constituencies have an interest in reducing the number of ESG indicators that are tracked and reported.[12] In the view of many observers, the current GRI guidelines are too lengthy, contain too many indicators, and are unduly burdensome. Many believe that the extensive time and effort required to comply with the guidelines tends to inhibit more widespread reporting, and will continue to limit uptake of the GRI in the U.S. unless and until the guidelines can be streamlined to produce a smaller number of indicators.

Implications and Recommendations

- **More clarity (or at least, more transparency) is needed regarding the relationships between ESG management and performance improvements and corporate financial performance.**

  Although some ESG investors claim to have developed methods to perform such calculations, at a general level, the specific variables and functional form of any such methods remain unclear to most observers. A necessary input to any such approach, it seems to us, is a clear value proposition linking changes in ESG posture and performance to quantitative measures of financial risk, revenues, and cash flow/earnings.

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[11] Reviewing the list of 108 ratings compiled by SustainAbility in its Rate the Raters (Phase 2) report issued in October 2010 (SustainAbility, 2010), reveals that only 28 are clearly and primarily investor focused ratings. The remainder of the ratings identified by SustainAbility have been developed for other purposes, including media/publication, benchmarking (primarily for corporate use), advocacy, and awards.

[12] We acknowledge that this will not be a universally held opinion within the ESG research community. Many ESG researchers would argue that there are important issues that matter in the world and the fact that companies aren't tracking them does not reduce their importance. In part, this construct of aligning the lists of issues more closely may increase the amount of pressure companies feel in other areas to track additional issues, perhaps through shareholder resolutions.

In addition, to experience a significant breakthrough, both corporate communications and ESG analysis will need to address the goal of investment analysis directly, by including estimates of future incremental cash flows and risks as a function of ESG factors. Doing so is, in fact, the key to producing a positive "alpha" from this activity. Moreover, fully implementing investment analysis into ESG evaluation (or vice versa) is at the essence of the "ESG mainstreaming" that is a primary goal of the PRI and other efforts to bridge the worlds of organizational sustainability and investment. It would seem that the incentives are in place for further progress to be made in this regard and, from our perspective, the potential benefits are compelling.

- **Additional research is required to determine how closely disclosure reflects ESG management quality and performance.**

  In this report, we have documented that some companies track a number of key metrics, report a significant percentage of these to the uppermost levels of management, and disclose a large portion of them to the public. We are inclined to ask: are these companies leadership companies based on their level of disclosure, the time and effort these issues receive from senior management, or the fact that they are tracking these issues for internal management purposes? Ultimately, this question is best answered by understanding what non-leadership companies are doing. Are they only failing on the issue of disclosure, or do their practices lag behind somewhere earlier in management process, such that they have fallen behind their peers? Currently available facts do not support an answer, and this remains an area for further study.

- **Recognizing that some gaps remain in our understanding of the linkages, our research illuminates a number of key issues and questions that speak to corporate value creation through adroit management of ESG issues.**

  We offer here some questions that emerge from the research presented in this report. Those involved in corporate ESG issues management and in ESG research, evaluation, and investing may wish to consider these questions in the context of what they track and what they ask for, respectively:

  - Within a particular company or industry, how and in what ways can management of ESG issues promote improvement of core business processes (e.g., manufacturing, service delivery)?

  - What is the relationship between company culture and the firm's current ESG posture and recent performance? Can a focus on some key ESG issues help induce changes in company culture that promote wider business and financial goals? Alternatively, can cultural (or organizational) change serve to remove major barriers and accelerate improvements in ESG and/or business performance?

  - Companies send ESG information of various kinds to the internal functions and levels where it is needed. Does a company's current pattern of information use imply effective

management (or its absence)? How should this be considered and used by ESG researchers and analysts, if at all?

- Many firms use one or more risk assessment processes to evaluate ESG issues and their importance. How broadly do these processes extend at different companies? What do they include? How does their scope and focus align with risks perceived by ESG researchers, analysts, and investors? What do the answers imply about the quality of management and the financial prospects of the firm?

- How can standard tools that are used within a particular industry (e.g., market research for consumer goods) be used to stimulate further adoption of ESG improvements? How do such tools and opportunities vary by industry?

- What do both companies and ESG researchers believe are the key predictive metrics? How do these vary between the two? How do they vary across industries?

- To what degree are life-cycle analysis and related tools being used in a company or industry? What does this imply about their level of understanding of emerging business and financial risks?

- What are the business and financial implications of emerging international regulations, voluntary codes of conduct, consensus international standards, and other potential constraints and influences on corporate ESG-related behavior? How does this vary by industry? By company?

- What is the right mix of issues in evaluating companies on ESG/sustainability issues? How much of the evaluation should be based on management? How much on performance? How much on impacts?

♦ **Greater dialog and sharing of information and perspectives is essential for both sides to understand the other's needs and constraints, and to forge communication mechanisms that are more effective and less burdensome.**

We believe that the path forward involves dialog and sharing of perspectives among all those involved in measuring, evaluating, and communicating corporate sustainability performance. We hope that the information and findings presented in this report provide useful background and perspectives in support of this dialog.

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Appendix A: Methods

The research described in this report proceeded in several sequential steps to first characterize the current state of play of ESG research data collection and analysis and corporate sustainability measurement and disclosure, respectively, and then to evaluate overlaps and disparities between these two distinct perspectives.

We began by collecting and mapping available information on current ESG research firm data needs, including descriptions of SRI and sustainability investment products (e.g., FTSE4Good, Dow Jones Sustainability Indices), company ratings lists (e.g., *100 Best Corporate Citizens* by CR Magazine and *500 Greenest Companies* by Newsweek), and common data requests (e.g., the Global Reporting Initiative (GRI) and the Carbon Disclosure Project (CDP)). Given our knowledge of the ESG research community and previous work, we had some pre-existing knowledge of the prominent players in this community and, at a general level, their objectives in and approach to collecting and analyzing corporate ESG data. From our previous work, we had established that most ESG researchers perform company/industry ratings, rankings, and other evaluative work on behalf of investors who wish to employ SRI screens or more actively pursue a portfolio development strategy emphasizing ESG issues and endpoints. For this reason, we focused on the companies serving (primarily) investors and did not evaluate many of the scores of organizations that develop company ratings or rankings for other purposes.[13] We focused on well known representative ESG/sustainability ratings that are broad-based, rather than narrow issue-area based ratings. While not comprehensive, we believe the sampling of ratings we selected represents the "solid center" of the approaches used within the ESG research community.

Our efforts at gathering information regarding these ratings were based on publicly available descriptions of each rating and underlying methodology. This approach served several purposes. First, it made the information more readily available and second, it allowed us to view all ratings through the lens of the public. In essence, we were able to ascertain how ratings developers wanted their methods and ratings products to be perceived. The level of detail available for each of the ratings we evaluated varies dramatically. In the aggregate, however, our approach provides a thorough and even-handed way of representing the overall interests of ESG researchers even if information regarding any single rating seems lacking in certain cases. Finally, our focus on publicly available descriptions of these ratings allowed us to avoid the trap of researchers being interested in everything, and therefore not being able to discern what was of enough value to warrant inclusion in our analysis. By using public sources, every ESG rating was given the same opportunity for issues and interests to be included—the developer(s) of each at an earlier date could have made the determination to disclose greater detail or incorporate a new concept into the ratings construct.

[13] According to a recent set of reports published by the think tank SustainAbility, more than 100 distinct ratings, rankings, indexes, and other evaluations of one or more aspects of corporate sustainability are now in use (see SustainAbility, 2010 for details). Reviewing the list of ratings incorporated into SustainAbility's reports, one can see that a number of ratings are very narrow in scope based on issue, geography, industry, or other factor that determines the rating. Most of the SustainAbility listed ratings do not qualify according to our criteria for this study, and hence, have not been included.

As shown in Section 4, our analysis of the ratings takes the form of a series of mappings of the ratings to one another. These mappings are performed from different angles and at different levels of detail, but allow us to get a sense of the ESG research industry that does not necessarily emerge when looking at a single rating. Our objective in this portion of the study was to create that impression of the ESG research community as a whole. As discussed at several points in this report, we were not seeking to evaluate any individual rating, or even identify "best practices," we were attempting to inform the impression that exists of ESG research.

In parallel, we explored recent survey results from the 'Green Metrics that Matter,' an initiative by the National Association for Environmental Management (NAEM) to identify the core set of key performance metrics that companies track internally. This in-depth survey of about 70 environment, health and safety (EHS) and sustainability decision-makers from NAEM's leadership companies provided insight into how metrics are tracked inside companies, what they're used for and the highest level to which they are reported. It also revealed the numbers of requests companies are receiving (on average) and quantified the amount of time companies are spending to respond to external requests. The resulting data are summarized in NAEM's report *Identifying Corporate EHS and Sustainability Metrics: What Companies are Tracking and Why* (NAEM, 2011), which provided part of the basis for this research and analysis.

The NAEM survey instrument had two distinct parts, focusing on the EHS and sustainability data that companies track internally, and their interactions with the external ESG research community, respectively. Questions in the first section were directed toward the major issues and endpoints that are typically addressed by corporate EHS and sustainability programs and that can be quantified in one or more performance metrics. For each metric (e.g., greenhouse gas emissions, paper recycled) we sought to understand whether the company has established one or more improvement targets, the primary purpose for tracking performance,[14] the highest organizational level to which performance and/or progress toward target attainment is reported, whether and to what extent performance (relative to the metric(s)) is publicly disclosed, and the geographic scope of the associated data development and reporting activities. To assist the respondents, NAEM pre-populated the survey with a number of commonly used EHS metrics, but left blank responses to accommodate other alternatives, and also posed a few open-ended questions to solicit respondent views on the most important sustainability metrics used by the company and any on additional metrics or issues that might warrant consideration.

Primary Use of EHS/ESG Metrics-Definitions

- Learning-enable understanding and/or insights that may be applied to produce future performance improvements
- Decision-Making-produce quantitative data needed to inform one or more business decisions
- Regulatory Compliance-required by regulation, permit conditions, or order
- Other Accountability Purposes-yield performance results needed to evaluate success and/or progress of programs, initiatives, capital investments, procedures, and/or personnel; also to provide data needed to satisfy expectations of external stakeholders, and
- Demonstration-produce results needed to evaluate feasibility, cost-effectiveness, or other business criteria and/or to provide assurance to internal or external stakeholders of completion or some other aspect(s) of effectiveness.

[14] The definitions of "primary use" of the data are provided in the box above, and were adapted from the *Metrics Navigator* developed by the Global Environmental Management Initiative (GEMI, undated).

The second major section of the survey had a fundamentally different orientation. It contained a number of questions addressing the requests companies receive for EHS, or more generally, ESG information from outside parties, what factors responding firms have considered in deciding how to respond to such requests, what processes the company has used in responding (if relevant), and their impressions of and level of satisfaction with both individual ESG research organizations and the general state of the ESG research community and its major outputs.

In combination, corporate responses to the two components of the NAEM survey provided an extensive data set with which we could determine which EHS and, to a limited extent, broader ESG issues are actively being tracked within this set of companies, how the resulting metrics data are being used and by whom, and the extent to which these data might be of use and are being made available to interested parties outside the organization. This data set served as an important set of inputs to our analytical process.

Once we had organized and reviewed the ESG information tracked and used internally by companies (as reflected in the NAEM survey results) and the corresponding information we collected during the early stages of this project addressing corporate information that appears to be of interest to ESG researchers, we conducted an analysis comparing and contrasting the categories of information sought, identifying areas of overlap or common interest, clarifying areas of apparent divergence, and developing possible explanations for both the commonalities and differences between these two perspectives. Our general expectation, based upon past work and experience, was that corporate users of EHS/ESG data would be primarily motivated by a desire to pursue performance improvement and enable accountability, inform managerial decision making, and promote organizational learning. In contrast, we expected that primary motivations for external collection and analysis of corporate ESG data, including that performed by ESG researchers and investors, would primarily be a desire to monitor corporate behavior, receive assurance that appropriate governance and risk management practices are in place, develop evidence of company leadership (or its absence), seek signs of competitive advantage and possible future outperformance, and inform and facilitate investment analysis and decision making.

To supplement and enrich our understanding of the empirical data collected and evaluated for this project, we conducted a limited number of interviews with people having extensive experience in and knowledge of, respectively, corporate EHS/sustainability management and external evaluation of corporate sustainability performance. The members of each of these groups were provided with a short list of questions, which served as the point of departure for telephone interviews (or simply, direct responses) addressing the approaches taken to evaluating important sustainability issues. Corporate interviews were conducted with eight environmental/EHS/sustainability directors or managers represented in the sample of companies reflected in the NAEM survey, and six interviews were conducted with members of the ESG research/investing community, most of whom are employed by firms addressed in this research effort. Along with our description of our empirical research results in the body of this report, we provide summaries of the information and perspectives provided by those we interviewed. Interviewee names and affiliations are provided in Exhibit A-1.

The input provided by these experts helps us to establish useful context for the domain of corporate ESG posture and performance, and enables us to better interpret the empirical data presented in this report describing the formulation, development, and use of organizational sustainability metrics, both inside and outside the corporation.

Exhibit A-1
Experts Interviewed for this Project

Role	Person	Company	Industry
Corporate EHS/Sustainability Managers and Directors	Tom Cervino	Colonial Pipeline Company	Energy
	Suzanne Fallender	Intel	Electrical Components and Equipment
	Withheld	Withheld	Household Products-nondurable
	Phil McAndrew	Kraft Foods	Food Processors
	Mike McGuire	John Deere	Machinery
	Sandy Nessing	AEP	Utilities
	Pat Perry	CVS Caremark/ Target Corporation	Retail
	Kelvin Roth	AMCOL	Mining, Manufacturing
ESG Researcher/ Investors	Stephanie Cuttler Aument	Calvert	Money Management
	Eric Fernald	MSCI	Research and Analysis
	Julie Gorte	Pax World	Money Management
	Stephen Hine	EIRiS	Research and Analysis
	Glen Yelton	IW Financial	Research and Analysis
	Bahar Gidwani	CSRHub	Research and Analysis

Appendix B: ESG Firms and Ratings

Pax World

Pax World launched the first socially responsible mutual fund in 1971. Its current focus is on "sustainable and responsible investing." Our analysis for this report is based on information that can be found at http://www.paxworld.com/investment-approach/sustainability-research/key-issues-briefs/. We first reviewed this material in November 2011.

Calvert Signature Strategies Mutual Funds

Calvert is a Bethesda, Maryland based mutual fund company with a significant history in the socially responsible investing (SRI) space—more than 25 years. Calvert currently manages around $12.5 billion in assets. Calvert offers a variety of SRI solutions and options to its clients/investors. Our analysis for this report is based on the Calvert Signature Strategies Funds and their criteria. The documentation on which we relied can be found at http://www.calvert.com/sri-signature-criteria.html#Governance_and_Ethics. We first reviewed this material in September 2011.

Dow Jones Sustainability Index (DJSI)

The DJSI is a collaborative effort of Sustainable Asset Management (SAM), a Zurich Switzerland-based asset manager and ESG research firm and Dow Jones, which is now owned by CME Group. Formed in 1999, the DJSI is a well-recognized international effort at creating a sustainability benchmark. Currently, approximately 60 asset managers globally license some component of the index series. The SAM survey/questionnaire is also one frequently mentioned by companies. Our analysis for this report is based on a sample questionnaire which can be found at http://www.sam-group.com/images/sample-questionnaire_tcm794-267819.pdf. We first reviewed this material in September 2011.

FTSE4Good

FTSE4Good is an index series created by FTSE, a joint venture of the Financial Times and the London Stock Exchange. FTSE4Good is designed "to meet globally recognized corporate responsibility standards." The specific criteria are developed and maintained through FTSE and a set of advisory committees and public comment efforts. EIRIS and EIRIS partners are the researchers supporting the ESG components of the effort. Our analysis for this report is based on published inclusion criteria which can be found at http://www.ftse.com/Indices/FTSE4Good_Index_Series/Downloads/F4G_Criteria.pdf. We first reviewed this material in November 2011.

MSCI

MSCI is a global powerhouse in the financial services industry. With its acquisition of RiskMetrics in 2010, MSCI became the owner of record for a stable of well known names in the SRI/ESG research market. The legacy research, products, and staffs of KLD Research & Analytics, Innovest Strategic Advisors, Institutional Shareholder Services, and the Investor Responsibility Research Center are all now under the MSCI banner. Our analysis for this report incorporates several current ratings with MSCI branding, as well as a couple of products from MSCI predecessors.

MSCI KLD 400
As the name implies, this index comes from KLD and is actually the predecessor to the Domini 400. MSCI categorizes this index under its "values" products. Our analysis for this report is based on published documentation which can be found at http://www.msci.com/resources/products/indices/thematic/esg/MSCI_KLD_400_Social_Index_Methodology_Feb2011.pdf. We first reviewed this material in September 2011.

MSCI ESG Intangible Values Assessment (IVA)
The MSCI ESG IVA is a research and rankings product used as an input into specific ESG financial products, including indexes. Our analysis for this report is based on published documentation, which can be found at http://www.msci.com/resources/factsheets/MSCI_ESG_IVA.pdf. We first reviewed this material in November 2011.

KLD Research/Domini 400
As discussed above, KLD was first acquired by RiskMetrics in 2009, which was later acquired by MSCI. KLD's role in helping to develop the SRI industry is critical enough that a look at this key index is worthwhile. Our analysis for this report is based on a 2008 version of the Domini 400 Methodology which can be found at http://us.ishares.com/content/stream.jsp?url=/content/repository/material/kld_domini_rules.pdf&mimeType=application/pdf. This information was supplemented by an old copy we had in our files of the "2007 Environmental, Social, and Governance Ratings Criteria" for the KLD Socrates product. We first reviewed this material in October 2011.

Innovest
Our analysis for this report is based on a 2007 "Innovest Intangible Values Assessment" document.

CRD Analytics

CRD Analytics created the Global Sustainability Index to evaluate a list of 2000 global companies. Our analysis for this report is based on a description of the Global Sustainability Index found at http://www.crdanalytics.com/gsi50.php. We first reviewed this material in October 2011.

Asset4

Asset4 was founded in Switzerland and early on received investment from Goldman Sachs. It was subsequently purchased by Thomson Reuters, its current home. Asset4 is included in this study as a research firm, not as the background for a specific index or published list. Our analysis for this report is based on descriptions of its process found at https://customers.reuters.com/community/fixedincome/material/ASSET4ESGSCORES.pdf and http://thomsonreuters.com/content/financial/pdf/news_content/ASSET4_assetmasterProfessional.pdf. We first reviewed this material in September 2011.

CR Magazine Best 100 Corporate Citizens

The Best 100 Corporate Citizens list was first established by Business Ethics Magazine, which was acquired by Corporate Responsibility Officer Magazine in 2006. In the early years, KLD Research & Analytics supported production of the list. As of the 2008 list, IW Financial has served as the research

house supporting production of the list. (As noted earlier in the report, co-author of this study, Mark Bateman, in his role as Director of Research for IW Financial, has been an instrumental part of creating and operationalizing this list since IW Financial became involved.) Our analysis for this report is based on a list of all the data elements incorporated into the evaluation which can be found at http://www.thecro.com/files/2011%20data%20elements.pdf. We first reviewed this material for the report in September 2011.

GoodGuide

GoodGuide is an online tool allowing consumers to evaluate products based on their sustainability profile. Much of the evaluation also incorporates company manufacturing data. Our analysis for this report is based on the expandable ratings criteria and explanations found at www.goodguide.com. Choose any product and you can view the entire ratings data dictionary. We first reviewed this material for the report in November 2011.

CSRHub

CSRHub aggregates the data from a wide array of sources, including many of the organizations supporting other ratings reviewed for this study. Its purpose is to create ratings allowing for the benchmarking of companies against one another. Ratings are available to the public and enhanced offerings are available on a subscription basis. Our analysis for this report is based on a ratings schema which can be found at http://www.csrhub.com/content/csrhub-data-schema. We first reviewed this material for the report in November 2011.

Global 100 Most Sustainable Companies

The Global 100 Most Sustainable Companies is a list created by Corporate Knights. Corporate Knights publishes the Global 100 as recognition and a "carrot" for companies to do more in terms of sustainability. Our analysis for this report is based on criteria which can be found at http://www.global100.org/methodology/criteria-a-weights.html. We first reviewed this material for the report in November 2011.

Exhibit B-1
Coverage Mapping of Issues Addressed by Major ESG Rating and Ranking Methods

ESG Issue	SRI Mutual Funds (In house research)		Financial Indexes incorporating ESG factors				Research House Ratings		Non-investor Focused Ratings				Historical ratings	
	Pax World	Calvert	DJSI	FTSE4Good	MSCI KLD400	CRD Analytics	MSCI IVA	Asset4	CR Magazine	Good Guide	CSRHub	Global 100	KLD	Innovest
Climate Change	x	x	x	x	x	x	x	x	x	x	X	x	x	
Energy Use/Efficiency	x	x	x			x	x		x	x	x	x		x
Environment Emissions (non Climate Change)	x				x		x	x	x	x			x	x
Environmental Management	x	x	x	x	x				x	x	x		x	x
Water Use/Stress			x			x	x		x	x	x	x		
Environmental Fines/Compliance	x	x							x	x	x		x	x
Environmental Disclosure	x		x	x	x				x	x	x			
Environmental Liabilities		x					x			x	x			x
Renewable Energy	x	x					x				x		x	
Waste Production/ Reduction	x					x		x		x		x		
Environmental Policy	x	x	x	x					x	x	x			x
Recycling	x									x	x		x	
Resource Management and Use	x				x		x			x	x			
Environmental Spills								x	x	x				x
Environmental Product Design		x									x			
Biodiversity/Habitat	x						x	x		x				
E-Waste							x							
Opportunities in Environmental Technology							x							
Opportunities in Green Building							x							
Packaging Material and Waste							x							
Product Impacts/Ingredients	x	x	x							x				
Diversity Issues	x	x	x	x	x	x		x	x	x	x	x	x	

Employee Health and Safety	x	x		x	x	x	x	x		x	x	x	x	
Philanthropy	x	x	x	x	x				x	x	x		x	
Product Issues	x	x			x		x	x		x	x		x	x
Human Rights Management	x	x		x	x			x	x				x	x
Supply Chain	x		x	x	x	x				x	x			x
Human Rights Policy	x	x	x	x					x	x	x			
Brand Management/Marketing and Advertising/ Negative Images	x	x	x		x								x	
Bribery/Corruption Issues	x	x	x	x			x							x
Controversies	x			x				x	x	x			x	
Community Involvement	x				x			x		x	x			
Labor Management Relations / Employee Relations	x				x					x	x		x	
Anti-competitive Practices	x				x			x					x	
Stakeholder Engagement	x	x	x								x			
Workplace	x	x								x	x			
Business Ethics					x					x	x			
Employee Benefits									x	x	x			
Political Accountability and Other Political Issues	x				x								x	
Training						x				x	x			
Human Capital Issues			x				x							
Negative Economic Impact of Company Actions										x			x	
Oppressive Governments	x									x				
Privacy Protection			x				x							
Access to Communications							x							
Access to Finance							x							
Access to Healthcare							x							
Customer Management			x											
Insuring Health and Demographic Risk							x							
Opportunities in Health and Nutrition							x							
Raw Material Sourcing-Social							x							
Responsible Investing							x							
Workforce Reductions													x	
Corporate Governance (Traditional)	x	x	x		x		x	x	x	x	x	x	x	
Financial Performance						x			x					
Taxes												x		
Financial System Instability							x							
Research and Development												x		

Exhibit B-2
Inclusion of GRI Reporting Elements in ESG Ratings Methods

GRI Reporting Elements	Number of GRI Data Elements	SRI Mutual Funds (In house research)		Financial Indexes Incorporating ESG Factors				Research House Ratings		Non-investor Focused Ratings				Historical Ratings	
		Pax World	Calvert	DJSI	FTSE4Good	MSCI KLD400	CRD Analytics	MSCI IVA	Asset4	CR Magazine	GoodGuide	CSRHub	Global 100	KLD	Innovest
Economic															
Economic Performance	4						x		x	x					
Market Presence	2														
Indirect Economic Impacts	2	x	x	x	x	x				x	x	x	x	x	x
Policy															
Organizational Responsibility															
Training															
Goals and Performance															
Management Approach															
Environment							**								
Materials	2					x		x	x		x	x		x	
Energy	5	x	x	x			x	x		x	x	x	x		x
Water	3			x			x	x		x	x	x	x		
Biodiversity	5	x						x			x				
Emissions, Effluents,and Waste	10	x	x	x		x	x	x	x	x	x	x	x	x	x
Products and Services	2													x	x
Compliance	1	x	x		x					x	x	x		x	x
Transport	1														
Expenditures															
Policy		x	x	x	x					x	x	x			x
Organizational Responsibility					x						x				x
Training															x
Goals and Performance					x						x				
Management Approach	1	x	x	x	x	x					x	x		x	x
Social							**								
Labor Practices															
Employment	3								x	x				x	
Labor-Management Relations	2	x	x		x	x		x			x	x		x	
Occupational Health and Safety	4	x	x			x	x	x	x		x	x	x	x	
Training	3				x		x		x		x	x			
Diversity and Equal Opportunity	2	x	x		x	x	x		x	x	x	x	x	x	x

Policy		x			x										
Organizational Responsibility			x												x
Training			x												
Goals and Performance				x											
Management Approach		x		x	x										
Human Rights						x			x						
Investment and Procurement Practices	3	x					x	x			x				x
Non-discrimination	1														
Freedom of Association	1				x					x		x		x	
Child Labor	1				x					x		x			
Forced and Compulsory Labor	1				x					x		x			
Security Practices	1				x										
Indigenous Rights	1	x			x					x	x	x		x	
Policy		x	x	x	x					x	x	x			
Organizational Responsibility					x										
Training					x										
Goals and Performance															
Management Approach		x			x										
Society															
Community	1	x	x			x			x		x	x			x
Corruption	3	x	x	x	x			x							x
Public Policy	2	x				x									
Anti-competitive behavior	1	x				x								x	
Compliance	1														
Policy		x	x												
Organizational Responsibility															
Training															
Goals and Performance															
Management Approach		x													
Product Responsibility									x						
Customer Health and Safety	2	x	x			x		x			x	x		x	x
Product and Service Labeling	3											x			x
Marketing Communications	2	x				x						x		x	
Customer Privacy	1			x											
Compliance	1	x													
Policy															
Organizational Responsibility															
Training															
Goals and Performance															
Management Approach		x													