



CORPORATE REPORTING ON WATER

A Review of Eleven Global Industries

Mari Morikawa, Jason Morrison, and Peter Gleick

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ABOUT THE PACIFIC INSTITUTE

Founded in 1987 and based in Oakland, California, the Pacific Institute for Studies in Development, Environment, and Security is an independent, nonprofit organization that provides research and policy analysis on issues at the intersection of sustainable development, environmental protection, and international security. Celebrating its 20th anniversary in 2007, the Institute strives to improve policy through solid research and consistent dialogue with policymakers and action-oriented groups, both domestic and international. By bringing knowledge to power, we hope to protect our natural world, encourage sustainable development, and improve global security. More information about the Institute, staff, directors, funders, and programs can be found at www.pacinst.org

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EXECUTIVE SUMMARY

In “Corporate Reporting on Water: A Review of Eleven Global Industries,” the Pacific Institute evaluates how global companies recognize, address, and report their water-related risks and practices. Using a framework¹ of ten activities for managing water-related business risks, the authors analyzed corporate sustainability and corporate social responsibility reports from 139 of the largest companies in 11 water-intensive industry sectors. This analysis reveals several patterns and gaps in corporate water reporting:

- **The vast majority of companies in water-intensive industries now report water information as standard practice.** The few companies not reporting in these sectors are the exception, not the norm.
- **Lack of context in water reporting undermines the understandability and usefulness of the data provided.** Only half the reports have information on company water policies or a description of water-management objectives. Fewer provide industry averages for any of the measures reported, or comparisons among their own facilities.
- **Despite some standardization in the field, water measurement methods and definitions remain inconsistent.** Companies use various definitions and scoping boundaries to report water use and wastewater information, making comparison and benchmarking difficult.
- **Information on companies’ water-related risks is not widely reported.** Only one in five reporting companies mentions water risks and challenges or describes programs to assess water risks.
- **Quantitative water-related targets are not commonly published.** Only 30% of the reports provide quantitative targets and even these often do not cover all the indicators reported by the company.
- **Supply chain issues are often overlooked.** Only 1 in 10 reports mentions supply chain considerations in relation to water management. Not a single company reports on the actual water use or wastewater data of their suppliers.

¹ As developed in “Freshwater Resources: Managing the Risks Facing the Private Sector.” by Jason Morrison and Peter Gleick, Pacific Institute.

- **Despite regional vulnerabilities, site-specific information is rarely considered or provided.** Many companies recognize their water-related risks are location-specific. However, only 18% of the reports include local- or facility-level water performance information.
- **Water recycling data are not reported.** Although many companies mention their focus on water recycling, only 1 in 10 reports include water recycling amounts or rates.

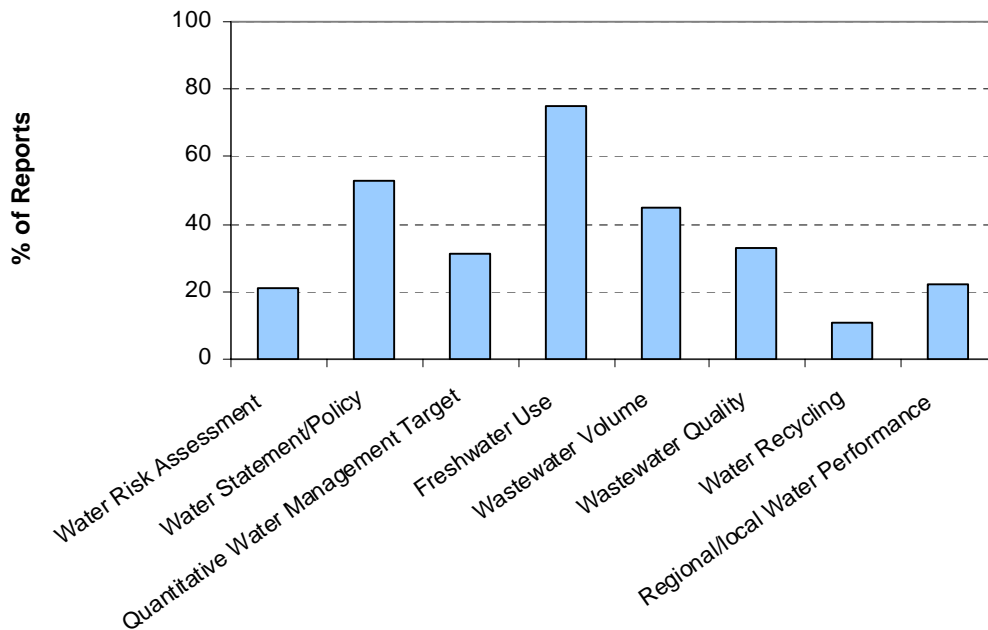


Figure ES1

Water Information Reporting Rates

Types of information published in non-financial reports.

The authors present this report in an effort to understand the strengths and weaknesses of corporate water reporting and to call attention to how reports can be made more effective and valuable to corporations and stakeholders.

In addition to the broad corporate analysis, the authors provide **sector-specific analysis** in Appendix A of the report. This analysis discovered a number of trends among water-dependent industries:

- Water reporting is inconsistent across industrial sectors.
- Sectors that use water as a main ingredient or otherwise require high-quality water tend to undertake water reporting more comprehensively.
- The sectors with higher water policy or statement reporting rates tend to have more comprehensive water reporting overall.
- Water reporting methods and report content often vary from company to company, even within the same industry sector.

I. INTRODUCTION

Water is a crucial resource for nearly all industry activities. Yet decreasing water availability, declining water quality, and growing water demands from non-industrial water users are creating new challenges to businesses that have traditionally taken clean and reliable water for granted. Around the world, corporations are now facing diverse water risks, including changing allotments, more stringent water-quality regulations, growing community interest and control over local resources, and increased public scrutiny of water-related activities. Confronted by these challenges, some businesses are starting to see the need to take more proactive and comprehensive strategic water management actions, and to report on those actions to shareholders and the public. In this study, we offer a comprehensive review of corporate reports, with a focus on evaluating how companies are recognizing, addressing, and reporting their water-related risks and practices.²

Corporations have long published annual financial reports describing economic trends and opportunities in their sector, as well as the yearly performance of their own firms. Over the past two decades, a growing number of companies have begun publishing non-financial reports to describe their environmental and social performance to their stakeholders, with the understanding that these factors are increasingly tied to financial performance and company reputation. Unlike financial reporting, sustainability reports take diverse formats, and the information presented in them varies widely from company to company. This is partly because sustainability reporting is still in the process of being harmonized, but also because the information that is considered material to a company and its stakeholders varies greatly among companies and industry sectors. In other words, the contents of such reports reflect what companies (and sometimes their stakeholders) perceive as critical. This study focuses on a review of corporate reporting pertaining to freshwater use and quality in an effort to provide insights on the type and extent of water risks businesses are recognizing as significant, as well as how they are striving to manage those risks.

² Our focus here is on corporate environmental, corporate social responsibility (CSR), and corporate “sustainability” reports (hereafter “non-financial reports”).

In evaluating water reporting, we use a Pacific Institute framework of 10 activities for managing water-related business risks.³ We selected and reviewed 139 companies from 11 water-intensive industry sectors. Our analysis looks at the entire sample as well as the sectors to identify industry-specific themes in water reporting. The companies included in this study are the largest in their industry sectors. With the exception of two companies based in China and Brazil, the sample consists entirely of multinational corporations from developed countries.⁴ The study found the following patterns and gaps in corporate water reporting:

- **The vast majority of large companies in water-intensive industries now report water information as standard practice.**

A high percentage (97%) of the reports reviewed provide some form of information on water performance or water-management practices and policies. The few companies not reporting in these sectors are the exception, not the norm.

- **Lack of context in water reporting undermines the understandability and usefulness of the data provided.**

About half the reports have no information on company water policies or a description of water-management objectives. Further, few companies provide industry averages for any of the measures reported, or comparisons among their own facilities.

- **Despite some standardization in the field, inconsistent water measurement methods and definitions remain problematic.**

Companies use various definitions and scoping boundaries to report water use and wastewater information, making comparison and benchmarking data difficult.

- **Information on companies' water-related risks is not widely reported.**

Only 20% of the reporting companies mention their water risks and challenges or describe their programs to assess water risks.

³ J. Morrison and P.H. Gleick. "Freshwater Resources: Managing the Risks Facing the Private Sector." Pacific Institute, Oakland, California. 2004.

⁴ While we hope to expand this analysis to a broader cross-section of companies, there are still important gaps in water reporting, as noted in this study.

- **Quantitative water-related targets are not commonly published.**

Only 30% of the reports provide quantitative targets and even these often do not cover all the indicators reported by the company.

- **Supply chain issues are often overlooked.**

Only 10% of the reports mention supply chain considerations in relation to water management. No company reports on the actual water use or wastewater data of their suppliers.

- **Despite regional vulnerabilities, site-specific information is rarely considered or provided.**

Many companies recognize their water-related risks are location-specific. However, only 18% of the reports include local- or facility-level water performance information.

- **Water recycling data are not reported.**

Although many companies mention their focus on water recycling, only 10% report their actual water recycling amounts or rates.

II. CORPORATE REPORTING: A BRIEF HISTORY

Corporate reporting of non-financial information goes back to the 1970s, when companies started to put environmental information in their annual reports.⁵ The reports, however, mostly consisted of descriptive anecdotal information more consistent with corporate public relations and advertising. They contained little detailed performance information. In the 1980s, regulatory requirements in the United States, such as the Superfund Amendments and Reauthorization Act and the Toxic Releases Inventory, began to require the disclosure of more performance data: in particular, they required that companies report information on the volume of pollutants emitted into air and water.⁶

The trend toward broader reporting began in the 1990s as the concept of “sustainable development” – introduced by the Brundtland Commission in 1987 – rapidly gained recognition among both the public and business sectors.⁷ In addition to providing environmental information, corporate reports during this time increasingly included information on social issues, such as community, labor, and human rights and stakeholder engagement practices.

The creation of the Global Reporting Initiative (GRI) in 1997 further solidified the practice of publishing comprehensive corporate reports, today often called sustainability or CSR reports. The GRI established the first international guidelines for reporting on the “triple bottom line”—the economic, environmental, and social performance of companies. GRI has continued to revise its sustainability reporting guidelines, releasing its third version in October 2006.⁸ In the public policy sphere, the emergence of formal environmental management regulations such as Europe’s Eco-Management and Audit Scheme⁹ re-

⁵ A. Tepper Marlin and J. Tepper Marlin. A brief history of social reporting. *Business Respect*, Issue Number 51, 2003.

⁶ W. Baue. A Brief History of Sustainability Reporting. *Trends in Sustainability Reporting Article* written for SocialFunds.com. July 02 (06), 2004.

⁷ G. Brundtland (ed.). *Our common future: The World Commission on Environment and Development.* Oxford University Press. 1987.

⁸ Global Reporting Initiative. *Sustainability Reporting Guidelines Version 3.0.* 2006.

⁹ The scheme has been available for participation by companies since 1995 (Council Regulation (EEC) No 1836/93 of 29 June 1993) and was originally restricted to companies in industrial sectors. Since 2001 EMAS has been open to all economic sectors including public and private services (Regulation (EC) No 761/2001 of the European Parliament and of the Council of 19 March 2001).

quires new measurement and reporting in the form of comprehensive environmental reports.

The number of companies publishing non-financial information is increasing rapidly as corporations and their stakeholders recognize the significance of social and environmental performance and how both can affect their financial performance. According to the database of CorporateRegister.com,¹⁰ the number of non-financial reports has grown from fewer than 50 in 1992 to over 1,900 in 2005.

¹⁰ <http://www.corporateregister.com> (accessed October 2006).

III. TEN KEY COMPONENTS FOR WATER RISK MANAGEMENT

A 2004 Pacific Institute briefing paper identifies global water issues and assesses the water-related risks most relevant to the business community. The study identifies 10 key activities that companies could (and should) take to better manage these risks. These activities are summarized below.

1. Measure Current Water Use

Companies need to measure their current water use and wastewater discharges associated with their own operations and production. These measurements should take place whether or not the company chooses to make the information publicly available. Although harder to track and quantify, they should also assess water use and discharges associated with key suppliers and inputs. This information will provide the baseline data for assessing risks, prioritizing management efforts, and measuring progress.

2. Assess Water Landscape and Water Risks

For key areas of operation and sourcing, companies should assess local water conditions, including hydrological, social, economic, and political factors. This assessment should flag risk areas of current shortage, rapidly growing demand, insufficient institutional and political water governance capacity, and large disparities in water access or prices between large commercial users and local communities. In high-risk regions, businesses should also have in place contingency plans to respond to water-supply and related risks, such as decreasing water quality, higher water prices, disruptions due to extreme hydrologic events and local concerns about the scope and pace of economic development.

3. Consult and Engage Stakeholders

By engaging key stakeholders concerned with water resources, companies can better anticipate and respond to emerging issues, such as competing water demands by local communities or industry, or local concern over wastewater discharge. Open discussions with water providers and local communities are a key factor in preventing or reducing the risk of future water-related disputes. In addition, proactive efforts by the company to improve water quality or water availability can help build positive relations with regional stakeholders.

4. Engage the Supply Chain

Many companies' most significant water impacts and risks may be embedded in their supply chain. Companies should assess and evaluate water use in their supply chain and work collaboratively with key suppliers to reduce water use and minimize risks of water-related disruptions.

5. Establish a Water Policy and Set Corollary Goals and Targets

Top management should clearly articulate the organization's policies regarding water-resource issues. In addition, companies should establish supporting quantifiable goals and targets for water-use efficiency, conservation, and minimizing water impacts and associated water-related risks.

6. Implement Best Available Technology

Companies should assess best available technology for reducing water use and wastewater discharges and commit to using such technology in new facilities and retrofitting existing facilities. There are numerous technologies that can reduce water use and improve water quality, including reclaiming and reusing process water, sophisticated filtration systems, replacing water cooling towers with air cooling, and more. Companies have often found that such technology investments can have short payback periods and generate high returns on investment.

7. Factor Water Risk into Relevant Business Decisions

Given its growing importance, companies should consider water scarcity and water-related risks as important inputs when making a range of strategic business decisions, from factory siting to new product development.

8. Measure and Report Performance

Companies should publicly report key metrics on their water use and impacts and track how their performance changes over time. This information improves transparency and feedback for investors, customers, local communities, and other key stakeholders, and is often a useful tool for engaging employees across the enterprise in supporting water programs.

9. Form Strategic Partnerships

Because many water-related issues can best be addressed on a regional scale involving multiple sectors and stakeholders, companies should consider building strategic partnerships through industry associations or multi-stakeholder programs formed to promote watershed protection and improve access to water for impoverished communities.

10. Commit to Continuous Improvement

Companies should commit to continuous improvement in assessing and managing water risks and lessening impacts of the company's water use on local communities and the environment. Doing so can help protect operations from unexpected water-related business disruptions. Such a commitment should be in written form and can be a stand-alone statement or part of an organization's overall environmental policy, such as the one required in ISO 14001.

IV. RESEARCH METHOD

This report reviews the corporate non-financial reports of the largest companies from 11 water-intensive industry sectors. It has three goals:

- Identify what water-related information companies are reporting,
- Understand issues and concerns considered important by different companies and industry sectors, and
- Assess trends in information collection and presentation.

Selection of the Industry Sectors

Based on our research on industrial water use and water-related risks, we selected industry sectors that 1) are highly dependent on water resources or vulnerable to water risks; and 2) have different types of business models and water-use characteristics (Table 1). For instance, some sectors require high-quality water as a key input to production, while others use water mainly for cooling or in-plant processes. Some businesses produce high volumes of wastewater, some are more concerned about the quality of wastewater discharge. There are industry sectors that have long and complex water-intensive supply chains and others that conduct most of their manufacturing in company-owned facilities.

Selection of the Companies

We decided to focus our analysis on the largest companies in each sector, because they are likely to have larger water-related impacts and risks; and non-financial reporting is not yet common practice among small- and medium-sized companies. Companies were selected based on the following criteria:

Apparel
Automobile
Beverage
Biotech/Pharmaceutical
Forest Products
Food Manufacturing
High-technology/Electronics
Metal/Mining
Refining
Utility

Table 1

Eleven Industrial Sectors Selected

- Publicly traded;¹¹ and
- Ten largest companies in each sector (globally) by annual sales greater than 15 billion (US\$) in 2005.¹²

Altogether 139 companies were selected for the analysis. The list of the companies by sector can be found in **Appendix A**.

Review of Non-financial Reports

We reviewed both the water management information and data presented in annual or biannual corporate non-financial reports. Reports were mainly accessed and downloaded from companies' websites.¹³ If no report was found on company websites, availability of the report was further checked on CorporateRegister.com. Among the 139 companies selected for this study, 121 (87%) publish annual or biannual corporate non-financial reports. The other 18 companies (13%) either do not publish non-financial information at all, or only have a one-time description (as opposed to regular/periodic reporting) of their environmental/social programs on their website. Figure 1 illustrates the percentage of the companies selected for this study that publish environmental or sustainability reports, by industry sector.

Our research focused on the contents of published reports themselves. Additional information presented on companies' corporate website was *not* reviewed, unless a company specifically mentions in its published report that more detailed information on related topics should be accessed on its website.

We evaluated the water-related corporate reporting using the Institute's 10 recommendations for water risk management as a framework. The 121 reports were reviewed to see the degree to which they addressed the 10 recommended management practices, and if so, what kinds of examples are given. The results were analyzed for the entire sample below, and by industry sector in Appendix A.

¹¹ The two exceptions to this criterion are Levi Strauss and Louisiana Pacific, both of which are privately owned but significant players in their sectors.

¹² For sectors having more than 10 companies with annual sales of more than \$US 15 billion, up to 15 companies were included in the analysis. The only exception is apparel industry for which we selected equal number of apparel manufacturers and apparel retailers (seven companies each) for a total of 14 companies.

¹³ **Appendix B** lists the URLs of the non-financial reports reviewed in this study.

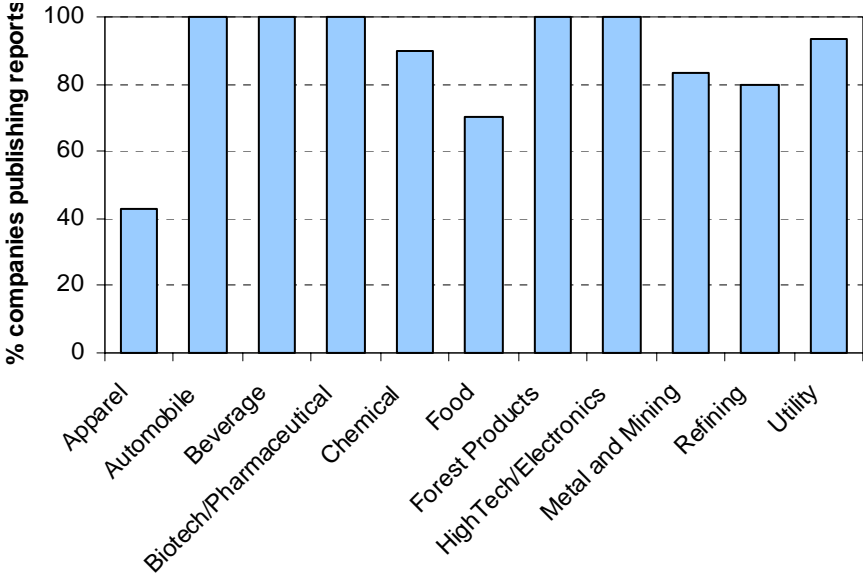


Figure 1
Publication Rate of Non-financial Reports, by Sector

V. RESULTS AND ANALYSIS

What Do Companies Report on Water?

Among the 121 companies that publish non-financial reports, 115 have comprehensive sustainability/CSR reports that include information on their social or economic performance in addition to environmental performance. Only 6 opted for an environmental report. One company published an independent water report in 2006 in addition to its CSR report.

Ninety-seven percent of the reports provide information on water management. They are presented in two broad forms: 1) descriptive information on water management policies, strategies or activities; and 2) quantitative information on water-related performance, such as total water use and wastewater quality. About half of the reports contain both types of information, and 63% of the reports have a designated water section or chapter (Figure 2). The following section examines the contents of both types of water reporting in detail using the Institute's 10 recommendations for water risk management as a framework.

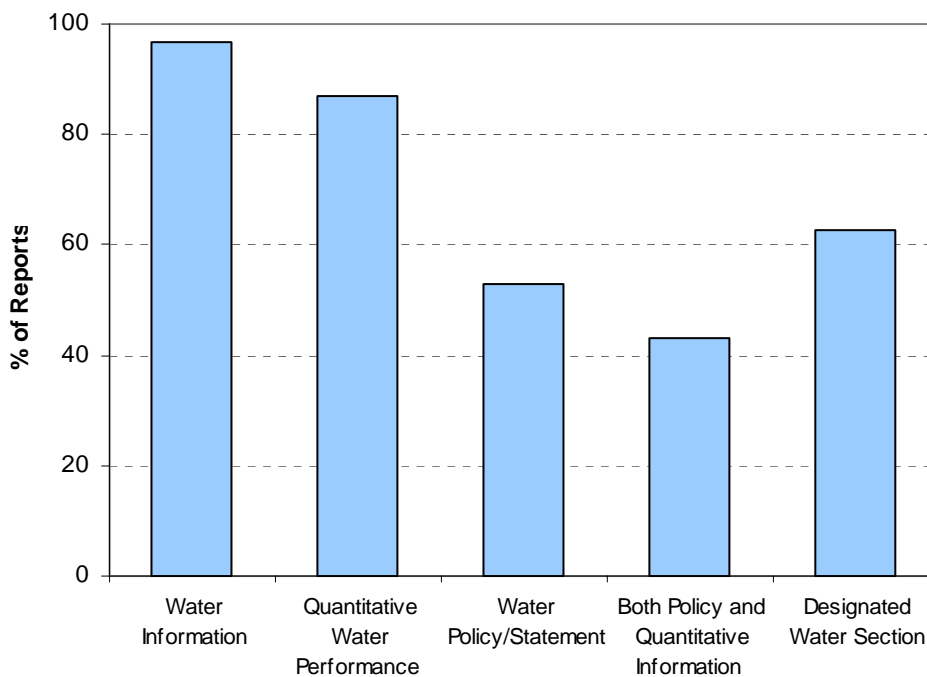


Figure 2

Water Information in Non-financial Reports

Water Management Policies, Strategies, and Activities

Measure Current Water Use

One-hundred three companies (85%) say they measure water use. Most (but not all) of these also publicly report the results of their measurements. A detailed discussion of how companies report water use performance begins on page 20.

Assess Water Landscape and Water Risks

Twenty-six companies (21%) mention water risk assessment programs or describe water-related risks they are facing. Most risk assessments focus on water supply or availability, and to a lesser extent on water quality. Broadly, companies recognize two types of water risks: risks posed by local hydrological or socioeconomic conditions, and risks business activities may impose on local and global water resources.

Nestlé conducts hydrogeological assessments of their bottled water sites, and monitors source water quality and other environmental conditions and parameters including water levels, spring flow, and rainfall data. Others pay more attention to risks caused by their business activities. Statoil, for example, assesses the environmental risk resulting from the discharge of “produced” water¹⁴ and ConocoPhillips has environmental risk management systems to analyze the environmental impact of the offshore discharge of waste from drilling and production. Several companies have more comprehensive analyses, looking both at the types of risks caused by natural conditions and the business impacts on the environment. For example, AkzoNobel developed a sustainable water-management model that describes and quantifies indicators to ensure that the users of certain water sources consume less water than is replenished by natural process and that the source water quality is not affected. BHP Billiton recognizes that its business often competes with agriculture and other human activities for access to water resources, and established water-management plans that require sites to identify water sources, water consumption, and opportunities to reduce water usage. Some companies conduct water risk assessment as a part of site selection process for new facilities; others do it as a part of ongoing water management.

While most companies include some mention of climate change and report their effort to reduce greenhouse gas emissions, only four companies (3% of reports reviewed) discuss water risks associated with climate change.

¹⁴ Produced water is water groundwater produced during oil or gas extraction.

Consult and Engage Stakeholders

Most of the companies (87%) describe policies and programs to engage stakeholders, but only 10 of them (8%) have explicit examples of stakeholder consultations as a part of their water management efforts. This number is notably low, considering that many companies' water statements seem to recognize water as a local issue.

Most of the companies that provide water-related stakeholder consultation examples are in the beverage or food manufacturing sectors. Anheuser-Busch's Water Council works with key stakeholders to develop initiatives and pursue research in water management. It also has educational program to raise awareness of water conservation and watershed protection issues. Groupe Danone reports that it cooperates with farmers, communities, and other local stakeholders to draw up guidelines for sustainable water management. It also reports appointing local managers to oversee operation of each spring in partnership with local communities and participants from the local economy.

Engage the Supply Chain

A majority of companies (88%) report supply chain management policies or programs, such as supplier codes of conduct. But as it is the case with stakeholder engagement, few (9%) explicitly describe their efforts to factor water risks into supply chain management. Some focus on efforts such as information sharing and educational programs for water conservation, while others have more prescriptive approach, such as implementing water standards for suppliers and measuring and monitoring their water performance.

Anheuser-Busch collaborates with its suppliers to understand their water management strategies and potential supply chain water-related risks. The company surveys the water use of its suppliers, and meets with the highest volume users and those located in areas that could potentially face limited water availability. Unilever's Sustainable Agriculture Programme that measures water impacts at the farm level. Nike developed a company-wide water quality standard called Nike Apparel's Global Water Quality Guidelines and encourages suppliers to meet their local legal requirement or Nike standard, whichever is more stringent. In the area of water conservation, Nike also describes its work with textile suppliers to minimize the use of water resources and promote better water management in process operations.

Even though several companies measure or monitor their suppliers' water performance, only two companies report the actual data. Nike reports the percentage of suppliers that have water efficiency programs and are in compliance with its Global Water Quality Guidelines. McDonald's reports water use

change (from 2004 to 2005, in percentage values) of suppliers by five commodity areas: potatoes, poultry, pork, beef, and buns.

Establish a Water Policy and Set Corollary Goals and Targets

Just over half of the reports have some kind of water policy statement. These statements provide background or overview of the companies' water management and include a combination of the following information:

- **General statement on the importance of water resources.** They explain how important and crucial water resources are for life and the environment. Some mention global water issues such as growing populations without access to safe drinking water and declining water supply in some parts of the world.

Water resources are becoming fragile and scarce in many parts of the world, as humans make increasing demands on them (Veolia).

- **Importance of water resources for their business.** They describe why water is important and how water is used in their business.

Fresh water is crucial at every stage of our product life-cycle, from production and processing of raw materials to consumers using and disposing of our products (Unilever).

The paper industry requires huge amounts of industrial water. Paper quality cannot be ensured unless pulp fiber is diluted with water during the paper-making process at a ratio of about 0.5% pulp to 99.5% water (Oji Paper).

We use fresh water from many sources, including lakes, rivers, wells and municipal supplies, for cooling, steam generation and industrial processing. Water is a critical natural resource for BP and an aspect of the natural environment we want to protect (BP).

- **Impact of their business on water resources and challenges they face in water management.** Some companies describe how their use of water resources or wastewater discharge affects the environment and the community where they operate.

According to United Nations data, around 52% of our current production volume originates from plants operating in countries that have some nature of water vulnerability and this is expected to increase (SAB Miller).

Comparatively, we use more water than non-food industries because maintaining sanitation and food safety is of paramount importance to us, and this constrains our ability to reduce water consumption (Tyson Food).

- **High-level commitments related to water management.** Some companies describe their efforts to use water resource efficiently and protect water resources.

Our central focus is to continue to meet the water supply and wastewater needs of our customers, without harming the environment, despite the pressures of population growth and increased climate variability (RWE).

To help foster long-term sustainable water resources, water conservation and management are integral functions at our mills (International Paper).

Seventy companies (58%) publish explicit goals or targets in water management, which includes the following categories: reduction in water use, improvement in water-use efficiency (i.e., reduced water use per unit of production or sales), improvement in the rate of water recycling, reduction in wastewater discharge volumes, and improvement in wastewater quality. Among the companies that set management goals, about a half have quantitative targets (e.g., 5% reduction of water use per liter of product over the next five years) while the rest do not provide specific targets (e.g., reduction of water use). Most quantitative targets are short-term (typically annual or less than 5 years) though some targets are long-term (5-10 years). Fifty-nine companies (49%) set goals or targets for water use, and 33 companies (27%) for wastewater discharge volume or wastewater quality. Figure 3 summarizes reporting information on specific targets and goals.

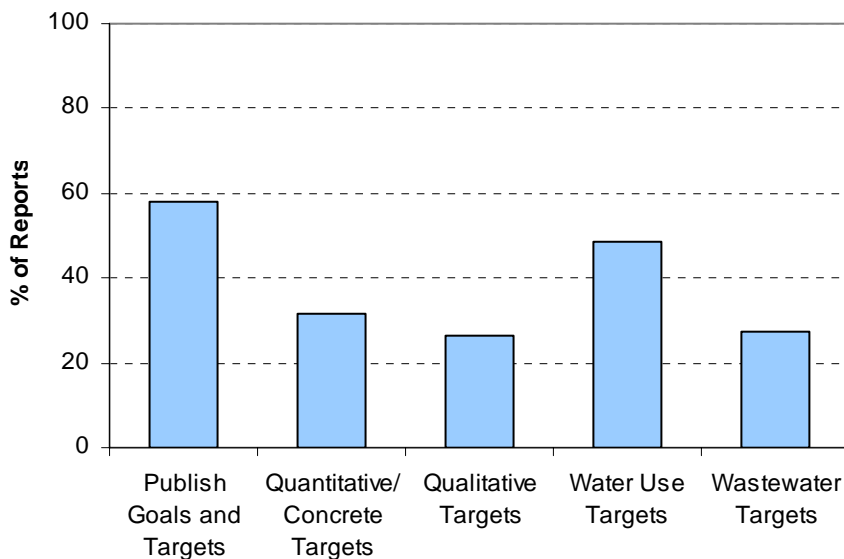


Figure 3

Water Management Goals and Targets

As published in non-financial reports.

Most of the published quantitative targets are at the overall corporate level, but some companies set separate targets for water-intensive business units, or facilities located in water-stressed areas. A few companies set quantifiable

goals related to water management practices, such as the percentage of facilities that meet the company's water standards or that implement water management plans.

Implement Best Available Technology

Fifty-six companies (46%) either mention a policy to use best available technology (BAT) or describe their use of innovative and cutting-edge technologies. Among those, 36 companies have specific examples in the area of water management. Most describe their efforts in the form of case studies of sites and facilities where new technologies are used to treat water or to improve water-use efficiency. The case studies often include information on financial savings realized through the projects. About 20 companies report the amount of expense or investment for water conservation or wastewater treatment.

A majority of the technologies mentioned are wastewater treatment and recycling; a smaller number report on water-use efficiency technologies. A few companies mention the use of information technology, such as computerized data collection and analysis systems for water resources and effluent.

Factor Water Risk into Relevant Business Decisions

Perhaps due to competitiveness reasons, only 23 companies (19%) explain how they incorporate water information into strategic business decisions. Some have policies and programs to integrate water issues into their overall management practices. For instance, Nike has a life-cycle matrix to identify water-conservation and water-quality measures that are or can be implemented for each life-cycle stage including: product creation; materials; manufacturing process; delivery, packaging and logistics; consumer end of life; and corporate operations. Alcan created a company-wide management system that takes a systematic approach to managing water resources, with a focus on resource efficiency, recycling, and reuse.

Others describe using water information for specific strategic decisions, including new site selection/evaluation, financial decisions, and new product/process development. As a part of its site development policy, Target Corporation specifies that the developer or contractor identify up to 10 LEED points from Sustainable Site and Water Efficiency categories as defined by the United States Green Building Council. SCA uses a risk assessment program to look at hydrological considerations and water emissions when it evaluates acquisitions.

BMW conducted a Sustainable Value project, which calculated the savings from water conservation measured by profit per cubic meter of water use and compared it against 16 other automobile manufacturers. PepsiCo describes a

Capital Expenditure Filter that ensures that sustainability issues, including water, are formally considered in all major capital expenditure proposals. Kirin uses an environmental accounting program to measure the impact of water use in business and the financial benefits derived from water-conservation projects. Merck is developing a methodology to assign a cost structure to water that reflects its true value. Merck and several others also mention the connection between water use and energy, and plan to factor water information in energy use management.

Several companies consider water risks when developing new products. Abbott and Unilever describe programs to develop products that require less water not only during production, but during the consumer use phase. P&G recognizes the global problem with safe drinking water supply and has developed point-of-use water purification tools, though they have run into problems marketing them commercially. Bayer selected global water demand and climate change as issues to consider when developing products and they describe their efforts to attain specific sustainability advantages by doing so.

Form Strategic Partnerships

Nearly all of the companies reviewed (112, 93%) report partnership programs with various stakeholder groups such as local communities, governments, NGOs, industry associations, and universities. Among those, 30 companies mention partnerships specifically in the area of water management. These programs fit into one of three types:

- Providing funding to groups or NGOs that are working on water issues, such as access to safe drinking water and watershed protection;
- Collaborating and sharing information with other companies through industry associations or working groups created by organizations such as the United Nations, WBCSD, and BSR; or
- Partnering with local communities and municipal governments to work on specific problems or solutions, such as co-development of water-related infrastructure with a municipal authority.

Nine companies – four beverage companies and others from the food, biotech, chemical, and metal sectors – also report programs or projects to improve access to safe drinking water in local communities and worldwide. For example, The Coca Cola Company established approximately 20 community and watershed partnerships with local and international bodies to help provide access to potable water and sanitation in communities where the company operates.

Most of the companies report water partnerships in case study format and few clearly state a commitment to use partnerships in water management. Abbott's water statement specifically mentions a policy to "engage with other water users and providers to promote appropriate water management principles and address challenges." Intel Corporation adopted a new water conservation strategy that focuses not only on its internal efforts but also on how it can share its expertise and learning with other businesses; promote water conservation education and awareness in its local communities; and collaborate with universities, water suppliers, governments and water users to solve the most pressing regional water challenges.

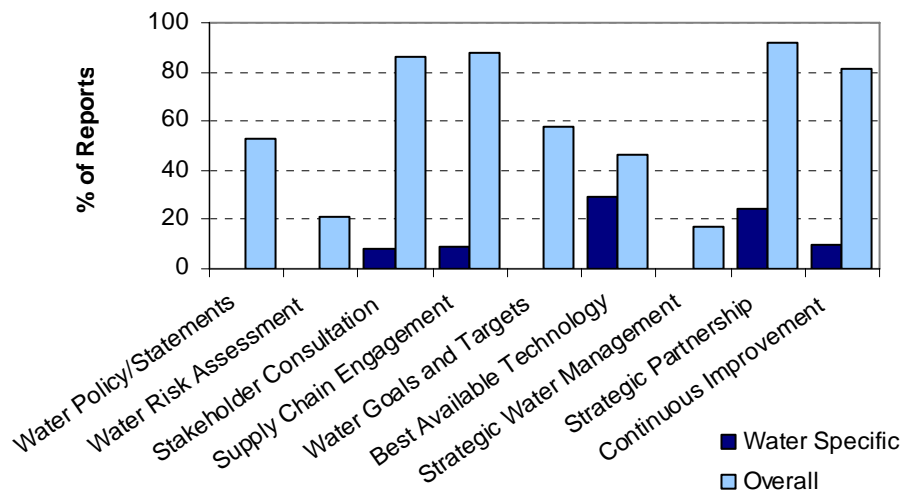


Figure 4

Water Policy and Management Strategy Reporting

For five parameters, dark blue bars indicate the percentages of reports that provide descriptions and examples specifically related to water management.

Commit to Continuous Improvement

Ninety-eight companies (81%) mention their commitment to continuous improvement or have an environmental management system (EMS) in place. However, only 13 of them have policies or case studies that demonstrate such a commitment specifically in the area of water management. Some mention the use of their ISO 14001 EMS for addressing water issues, while others have a stated corporate policy or goal to strive for continuous improvement in the management of water resources. GM states it uses its ISO 14001-certified EMS for its water management efforts, and Ford has a three percent year-over-year water-use reduction goal. Abbott describes a policy to continuously improve its water-use efficiency and water-discharge quality within its worldwide manufacturing operations. ExxonMobil says it "continually seeks ways to reduce water use and preserve water quality, through the design and operation of our facilities, recycling and reuse and aggressive measures to prevent water pollution."

Water-Related Performance

Report Water Performance

One hundred five companies (87%) publish quantitative water performance data (either water use or wastewater related performance) in their reports.¹⁵ While most companies (88, 73%) report water use over time, the water performance reports are far from standardized.

Among the 103 companies that measure water use, 91 (88%) report the results of the measurement. However, the companies use a variety of terms and measures. Depending on the report, any of the following may be used to mean water use: water use, water consumption, water intake, freshwater withdrawal, specific water consumption, or total water withdrawal including seawater. Some only report a certain portion of their water use: process water use, industrial water use, manufacturing water use, process water input, industrial water input, or water used for primary activities.

Some companies provide specific definition of the terms or measurements they use, but the majority does not. According to the Global Reporting Initiative (GRI) Water Protocol,¹⁶ which provides measurement guidelines for its water indicators, total water use is represented by three figures: total water withdrawal, storage, and consumption.¹⁷ Total water consumption is the total amount of water consumed (i.e., not stored or discharged) by the organization. The Water Protocol recommends reporting all of these three figures for total water use, but most companies do not follow these recommendations.

Indicators Used for Reporting. Major indicators used to report water performance are: water use (91 companies, 75%); wastewater discharge quality (54 companies, 45%); wastewater discharge volume (40 companies, 33%); and water recycling (13 companies, 11%) (see Figure 5). Most companies reporting on wastewater discharge use two of the five indicators recommended in the GRI Water Protocol: biological oxygen demand (BOD) and chemical oxygen demand (COD). Occasionally, companies report the three additional GRI-recommended indicators: total suspended solid (TSS), nitrate/nitrogen, and

¹⁵ Companies that state they improved water efficiency, but do not provide any supporting data, are not included in this number.

¹⁶ Global Reporting Initiative. Water Protocol - for use with the GRI 2002 Sustainability Reporting Guidelines. 2003.

¹⁷ Total water withdrawal is the sum of all water drawn into the facility from all sources for any uses over the course of the reporting period. Storage is the amount of water withdrawn and put into storage, minus any water taken out of storage for use by the facility.

phosphorous concentrations or discharges.¹⁸

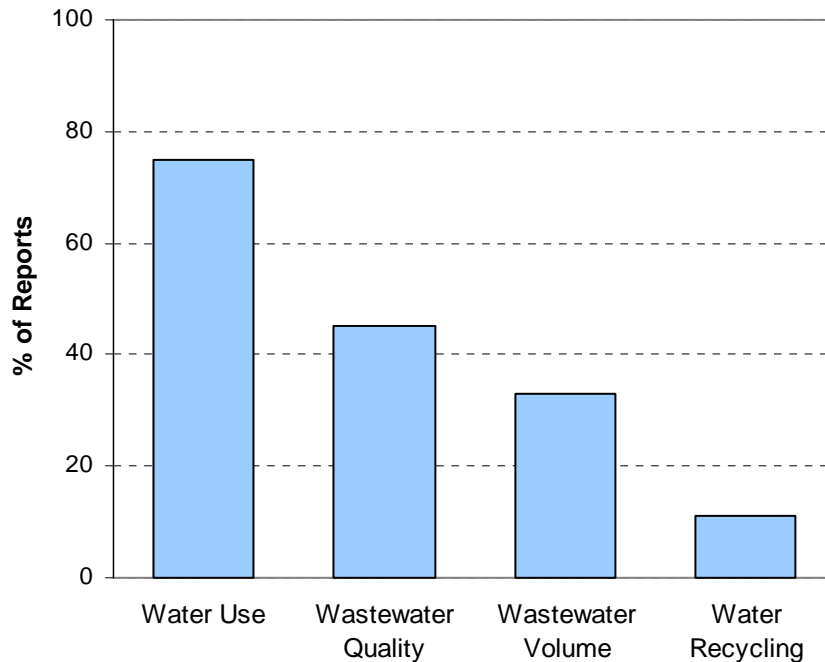


Figure 5

Use of Water Performance Indicators

The popularity of the GRI Sustainability Reporting Guidelines may have contributed to the higher number of water use and wastewater reports. Ninety-one (75%) companies mention that they used GRI's Guidelines as a reference to develop their report. Among those, 78 (64%) include the GRI Index or reference table that shows which indicators are found on which pages of their report. The 2002 GRI Guidelines have six water indicators¹⁹ – two core indicators and four additional indicators. Core indicators are those identified to be relevant to most stakeholders, and companies are required to report core indicators to be “in accordance” with the GRI Guideline.²⁰ The two core indicators ask companies to report total water use and significant discharges to water by type. Additional indicators represent emerging practices, or address topics that may be material to some organizations but not generally for a majority, and are considered optional.

¹⁸ Companies sometimes report discharge of other constituents, include various metals (lead, copper, zinc, etc.), absorbable organic halogens (AOX), and hydrocarbons.

¹⁹ The most current version of the GRI Guideline released in October 2006 (G3) has five water indicators. One additional indicator in the 2002 version – EN 32 Water sources and related ecosystems/habitats significantly affected by discharges of water and runoff – was deleted in the latest version. However, all the reports reviewed in this study were published before the release of the G3, and it is assumed that 2002 version was used to develop the reports.

²⁰ The “In accordance” system was developed for the 2002 version of the GRI Guideline. The G3 no longer uses “in accordance,” and instead rates the level of GRI application from A to C.

Some companies also use other indicators to report water performance, including rainwater use, water conservation contribution (i.e., estimated amount of groundwater replenished through the company's water cultivation projects), seawater use, water loss (percentage or amount of water lost during the distribution process reported by drinking water service providers), percentage of suppliers in compliance with the local or company's standard, and percentage of suppliers that have water-efficiency programs.

How the Data Are Reported. In addition to reporting a wide range of indicators, companies often use different units of measure²¹ and data formats relating to water. Over 70% of the reporters present their water performance in absolute values (e.g., 20 billion gallons of water used, 8,000 tons of COD released into water in 2005). Forty percent present the data in normalized form, such as water use per unit of production or economic value produced. Since the companies choose a normalization method that can provide the best insight to their business, the data vary widely from company to company, and from sector to sector. For instance, companies and sectors whose output can be well measured by weight or volume of product (such as beverages, metal/mining, and forest products) typically report water consumed (and other indicators) per liter or ton or cubic meter of products. Industries that have a distinctive unit of product typically use that unit, such as water consumed per pair of shoes or automobile. Others report water use per unit sales (such as gallons per dollar). Just over 25% of companies publish water-related data using both absolute and normalized values (Figure 6).

A majority of the companies studied (88, or 84% of companies that report performance) include water data for more than one year, typically in the range of three to five years, in order to present the performance trends. They often use charts to show the trend and performance against the targets.

Some companies report not only the total figures, but provide additional information on the composition of the total number by region or business unit. Twenty-one companies (17%) provide data on the amount or percentage of freshwater withdrawn from various sources (e.g., surface water, groundwater, or municipal water supply), a recommended practice according to GRI's most recent reporting guidelines. Twenty-seven companies (22%) publish water performance data by region or at the facility level. The majority of these companies are either from the forest products or metal/mining sectors, which tend to have a relatively small number of large facilities.

²¹ Some use the metric system while others (mostly American companies) report in English units.

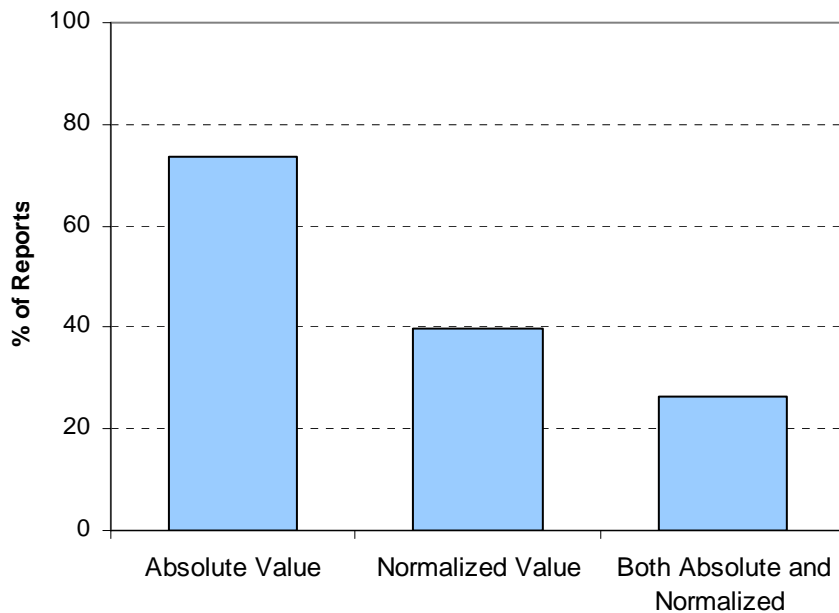


Figure 6

Water Performance Data Reporting: Absolute or Normalized Value

Other examples of data reported include wastewater discharge volume by destination (surface, ocean, ground, municipal treatment); water consumption by purpose (agriculture, cooling, mining, potable, process, steam, etc.); wastewater volume by source (process, cooling, production, group discharge, drilling discharge); water consumption by products (metal, aluminum, carbon, steel, stainless steel, coal, petroleum, diamonds). A few companies report water use by product lifecycle. For instance, Fujitsu reports water consumption per personal computer (notebook and desktop) for four major lifecycle stages: manufacturing, distribution/sales, usage, collection/recycling. Nike reports breakdown of water use by three lifecycle stages: corporate level, manufacturing, and textile production stage.

Sector Analysis

A comparison of reporting practices among industry sectors reveals there are distinctive sector-specific themes and characteristics in water reporting. For instance, some sectors have very detailed information on water use, while others pay more attention to the environmental impacts of their wastewater discharge. Some sectors tend to report water use in absolute values and others provide the data in normalized values. Some have detailed water policies, while others just present performance data. These sector-specific variations are due to:

- differences in how water resources are used (e.g., some consume water as main ingredient while others use water mainly for cooling purposes);

- size and location of individual operations (e.g., some industries have a large number of small facilities while others operate a few of very large facilities; some are located in industrial nations while others operate in developing countries); and
- social and political environment (e.g., history of water-related activism/boycott and legal reporting requirements for certain substances).

Appendix A provides a summary of key findings as well as detailed sector-specific analyses of the 11 industries included in this study.

VI. CONCLUSION

Global and regional water issues are having an effect on corporate risk, production, and decisions. For many companies and industrial sectors, the availability of reliable and clean water is vital for operations; for others, regional water problems are causing local communities to assess – and sometimes protest – local industrial water use and discharges. As a result, corporations have a growing need to understand and evaluate water issues, and stakeholders are calling on corporations to report on water use consistently and transparently. To meet these challenges, an increasing number of companies are expanding their annual or periodic reports to include information on water.

These reports, however, vary enormously in content, quality, detail, and format. The assessment presented here is an effort to understand the strengths and weaknesses of corporate water reporting and to call attention to how these reports can be made more effective and valuable to corporations and their stakeholders affected by industrial water management and use.

This analysis reviewed 121 non-financial corporate reports covering the period of 2005 to 2006. The study found that most of the reports reviewed (97%) provide some form of information on water performance or water management practices and policies. However, the examination of the reports revealed several important gaps and inconsistencies in corporate water reporting.

Lack of context in water reporting is a problem

Most of the reports provide some water data, but they often fail to give context to these numbers. Only about the half of the reports offer information on the company's water policies or a description of its water-management objectives. Water performance – such as water use or wastewater discharge volume and load – and its impact on local environment and communities vary greatly according to the type of business and the water landscape where their facilities operate. Without the information on company- or industry-specific water challenges and associated water policies and management objectives, the readers of the reports can not fully understand or interpret the performance data presented.

Inconsistent measurement methods and definitions are common

The scope and range of water information and the level of detail presented in the reports differ greatly from company to company, even within the same

sector. Moreover, different kinds of methods, scopes, boundaries, and units are used to report the same parameter (such as “water use”), often without an explicit definition of what they are reporting. Even for companies using the GRI Guidelines, there is no guarantee or confirmation that the measurement and reporting methods described in the GRI Water Protocol are being applied. Most reports do not define the scope or boundary for measurement or type of water use or discharge included in their numbers. Although the contents of the reports must reflect the needs of their audiences and stakeholders, some level of further harmonization of core information would improve the comparability and usability of the information, as well as the credibility and transparency of the corporate sector itself.

Information on the water landscape and associated risks is rarely reported

Only about 20% of the reporting companies mention their water risks and challenges or describe their programs to assess water risks. Businesses that are heavily dependent on water and have actually experienced problems such as conflict with local communities and disruptions of water supply are starting to see the importance of assessing and managing water-related risks. However, a review of their reports shows that few companies are managing the water issues strategically, in a way that they can turn risk information into opportunity. In addition, the water risk information that is available is mostly high level and qualitative and contains limited data on the type and level of the risks. The 2002 GRI Guidelines suggest three additional indicators that can provide water risk information.²² However, no company systematically reported these indicators.

Quantitative targets are not widely published

Only about half of the companies that have water performance goals publish quantitative targets, and these often do not cover all the indicators they report. Quantitative targets are especially helpful for stakeholders to evaluate the prospective water performance of a company or its facilities.

²² The three indicators are: EN20 Water sources and related ecosystems/habitats significantly affected by use of water (EN9 Water sources significantly affected by withdrawal of water in G3, GRI’s most recent version of its Guidelines); EN21 Annual withdrawals of ground and surface water as a percent of annual renewable quantity of water available from the sources (In G3, this indicator is deleted); and EN32 Water sources and related ecosystems/habitats significantly affected by discharges of water and runoff (in G3, this indicator became EN25 Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization’s discharges of water and runoff.)

Gaps in water performance reporting make comparisons difficult

While total water use is published in most of the reports, there are several important water performance indicators that are often not reported. Only 22% of the reports include regional or facility-level water performance information, although many companies recognize their water-related risks are location specific. Only 10% of the reports mention supply chain considerations in relation to water management, and no company reports on the actual water use or wastewater quality/quantity of their suppliers. Companies also rarely report on water recycling and reuse, though this is an increasingly important component of sustainable water management and use in the industrial sector.

* * *

This paper provides a snapshot of the current status of water reporting and offers a foundation for the more detailed analyses of industry sector-specific water risks and water management practices. Water information presented in corporate non-financial reports does not and cannot present a comprehensive and detailed picture of a company's water performance and water management practices. Rather, it is a reflection of what a company find material and critical for itself and for its stakeholders. Nevertheless, given stakeholders' increasing demands for more transparency and disclosure, growing water risks, and the introduction of the new GRI Guidelines,²³ the contents of corporate water reporting are likely to keep evolving. The results of this study provide a benchmark to evaluate the trends in water reporting in the future.

²³ The two core water indicators are slightly modified in the G3, providing more clarity on the definition of the indicators and how they should be reported. For instance, "EN5 Total water use" is revised to "Total water withdrawal by source (EN8)" and "EN12 Significant discharges to water by type" is modified to "Total water discharge by quality and destination (EN21)."

Table 2: High-Low Quartile Reporting Rates for Main Water-related Parameters by Sector

Industry	Apparel	Automobile	Beverage	Biotech/ Pharma	Chemical	Food	Forest Products	HighTech/ Electronics	Metal and Mining	Refining	Utility	Average*
Measure Water Use	17	87	100	92	67	100	90	87	100	67	100	85
Assess Water Risks	0	7	50	15	0	43	30	13	40	33	14	21
Consult Stakeholders	33	87	90	85	89	71	70	100	100	92	100	87
Engage Supply Chain	50	87	90	77	78	86	80	100	100	92	100	88
Water Statement/ Policy	33	40	70	69	11	86	70	40	80	58	36	53
Water Goals and Targets	17	47	80	69	44	71	60	60	60	67	50	58
Quantitative Target	0	33	40	46	33	29	30	47	40	8	21	31
Target Water Use	0	47	80	38	33	71	30	47	60	67	50	49
Target Wastewater	17	20	10	23	22	43	50	20	30	58	14	27
Best Available Technology	0	33	50	46	11	57	70	33	70	58	64	46
Water Risk in Decision Making	33	27	30	31	11	14	10	7	30	17	7	19
Measure and Report Performance	17	87	90	92	89	100	100	87	100	75	93	87
Report Freshwater Use	0	87	80	92	67	100	70	80	80	58	79	75
Report Wastewater Quality	0	40	30	62	67	29	90	33	70	42	21	45
Report Wastewater Volume	17	33	30	23	22	29	50	47	50	33	21	33
Report Water Recycling	0	13	0	15	0	0	10	13	40	8	7	11
Report in Absolute Value	0	87	50	92	89	86	70	60	100	67	79	74
Report in Normalized Value	17	47	80	69	33	43	40	33	50	8	14	40
Report Both Normalized and Absolute	0	40	50	69	33	29	20	13	10	8	7	26
Trends Reporting	0	67	80	69	89	100	90	60	100	58	79	73
Regional/facility-based reporting	0	20	20	8	11	14	50	20	60	8	29	22
Use GRI	50	73	80	77	56	57	70	80	100	75	86	75
Strategic Partnership	83	93	80	85	89	86	100	100	100	92	100	93
Continuous Improvement	50	93	80	77	89	71	80	80	80	83	86	81
Average	18	54	60	59	47	59	60	53	69	51	52	54

Key: Reporting rate = 0-25%
Reporting rate = 75-100%

*This average was calculated as a percentage of companies among 121 reporting companies that publish information on each parameter.

** This number is the average of the reporting rate of 24 parameters listed in this table.

APPENDIX A: SECTOR-SPECIFIC ANALYSES

The Pacific Institute reviewed 121 separate corporate non-financial reports related to water resources representing 10 to 15 companies from each of 11 different water-intensive industrial sectors: sectors that are highly dependent on water resources or vulnerable to water risks, and have different types of business models and water-use characteristics. Appendix A includes sector-specific analysis.

Summary of Findings

- **Water reporting is inconsistent across industrial sectors.** While each industry sector tends to focus on different aspects of water reporting, the metal/mining industry provides the most comprehensive water reports (69% of the water-related information we tracked). By contrast, the apparel manufacturing sector provides the least comprehensive reports (18% of the water-related information we tracked). On average, the sectors studied provide 54% of the water-related information we tracked.
- **Industry sectors that use water as a main ingredient of their product or require high-quality water for production tend to undertake water reporting more comprehensively than other water-intensive industries.** Our analysis found that a relatively high percentage of the beverage, biotech/pharmaceutical, and food sector businesses provide information on water policy/management as well as water-related performance metrics.
- **The high-technology/electronics, metal/mining, and utilities sectors have 100% reporting of the three parameters we use to measure interactions with external stakeholders and interested parties.** All of the companies in these three sectors provide at least some information on such activities: engage supply chain, consult with stakeholders, and form strategic partnerships.¹ The beverage and food industries have, by far, the highest percentage of companies that report stakeholder interactions specifically related to water.

¹ The average reporting rate of the other eight sectors on these three parameters is 81%.

- **The metal/mining and forest products industries have the highest percentage of companies that include facility-level/regional water reporting.** That these sectors have relatively fewer but larger facilities may explain this trend. These sectors also have a relatively high focus on wastewater issues.
- **The sectors with higher water policy/statement reporting rates tend to have more comprehensive overall water reporting.** Conversely, sectors omitting water policy information have less comprehensive water reporting. This finding confirms the importance of a clearly articulated water policy for both water reporting and corporate water management.
- **Water reporting methods and report contents often vary from company to company, even within the same industry sector.** Even though there are several industry-specific water reporting themes and characteristics, companies in the same industry often use different indicators and definitions to report their water performance, making water performance comparison and benchmarking difficult, even within sectors. Some of the sectors examined in this study have either developed their own reporting guidelines² or have GRI Reporting Guidelines sector supplements.³ However, only a fraction of the large companies in these industries consistently apply these standards/guidelines.

About the Reporting Percentage

The study selected and reviewed the 10-15 largest companies for each of the 11 industry sectors.⁴ In some sectors, not all the companies reviewed publish environmental/CSR reports (Figure 1 in the main report). For instance, the study reviewed 15 companies from the apparel/textile sector, but only 6 of them publish reports. When calculating the reporting percentage, we used for a denominator the number of companies publishing reports, as opposed to the number of companies reviewed for each sector.

² Such as Oil and Gas Industry Guidance on Voluntary Sustainability Reporting and the chemical industry's Responsible Care Reporting.

³ The automobile and metal and mining industries have GRI sector supplements. GRI is also developing sector supplements for apparel/footwear and energy utilities.

⁴ See Chapter IV: Research Method in the main report for a detailed description on how these companies were selected.

Table A1: Relative Reporting Rates of Major Water-related Parameters, by Sector

Industry	Apparel	Automobile	Beverage	Biotech/ Pharma	Chemical	Food	Forest Products	HighTech/ Electronics	Metal and Mining	Refining	Utility	Average*
Measure Water Use	17	87	100	92	67	100	90	87	100	67	100	85
Assess Water Risks	0	7	50	15	0	43	30	13	40	33	14	21
Consult Stakeholders	33	87	90	85	89	71	70	100	100	92	100	87
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Water Goals and Targets	17	47	80	69	44	71	60	60	60	67	50	58
Quantitative Target	0	33	40	46	33	29	30	47	40	8	21	31
Target Water Use	0	47	80	38	33	71	30	47	60	67	50	49
Target Wastewater	17	20	10	23	22	43	50	20	30	58	14	27
Best Available Technology	0	33	50	46	11	57	70	33	70	58	64	46
Water Risk in Decision Making	33	27	30	31	11	14	10	7	30	17	7	19
Measure and Report Performance	17	87	90	92	89	100	100	87	100	75	93	87
Report Freshwater Use	0	87	80	92	67	100	70	80	80	58	79	75
Report Wastewater Quality	0	40	30	62	67	29	90	33	70	42	21	45
Report Wastewater Volume	17	33	30	23	22	29	50	47	50	33	21	33
Report Water Recycling	0	13	0	15	0	0	10	13	40	8	7	11
Report in Absolute Value	0	87	50	92	89	86	70	60	100	67	79	74
Report in Normalized Value	17	47	80	69	33	43	40	33	50	8	14	40
Report Both Normalized and Absolute	0	40	50	69	33	29	20	13	10	8	7	26
Trends Reporting	0	67	80	69	89	100	90	60	100	58	79	73
Regional/facility-based reporting	0	20	20	8	11	14	50	20	60	8	29	22
Use GRI	50	73	80	77	56	57	70	80	100	75	86	75
Strategic Partnership	83	93	80	85	89	86	100	100	100	92	100	93
Continuous Improvement	50	93	80	77	89	71	80	80	80	83	86	81
Average	18	54	60	59	47	59	60	53	69	51	52	54

Key: Maroon = lowest reporting rate of the 11 industries

Pink = second lowest reporting rate (Note: pink not assigned if more than one sector shared the lowest reporting rate)

Green = second highest reporting rate (Note: light green not assigned if more than one sector shared the highest reporting rate)

Blue = highest reporting rate in 11 industries

*This average was calculated as a percentage of companies among 121 reporting companies that publish information on each parameter.

** This number is the average of the reporting rate of 24 parameters listed in this table.

APPAREL/TEXTILE SECTOR

General Description

The apparel manufacturing sector (NAICS 315) produces fabric or cuts and sews fabric into garments. Some apparel manufacturers also produce footwear (NAICS 3162 Footwear manufacturing). The apparel and footwear manufacturing industry is one of the most fragmented. Measured by sales, its companies are small compared to the other sectors analyzed in this report. Retailers that sell large volumes of apparel products are also included in this analysis. Many of these retailers also have their own apparel brand.

Summary of Findings

Compared with other sectors, the apparel manufacturing and retail sector published the lowest number of environmental/sustainability reports, with only 43% of companies reviewed publishing reports. In addition, their reports tend to be more descriptive and qualitative, with limited quantitative performance data. Only one company reports its total water use. One possible reason for this limited reporting is that most of the water use or environmental impacts of water use occur during the manufacturing phase and companies who serve as apparel brands or retailers do not yet recognize the water-related risks and responsibilities that arise in their supply chain. We also note a logistical challenge in measuring and tracking performance of a large number of suppliers, compared to other industries with shorter supply chains. Some apparel companies that have experienced controversy in non-environmental areas (e.g., human rights and labor issues), such as Nike and Gap Inc., are becoming more aware of the environmental impacts associated with the manufacturing and material supply aspects of their operations. They publish more comprehensive environmental data in their reports accordingly.

14 Companies Reviewed	2005 Sales (U.S. billions)
Wal-Mart	\$312
Costco	\$54
Target	\$52
Walgreens	\$43
AEON	\$40
Sears	\$39
Federated	\$22
Gap Inc.	\$16
TJX	\$16
Nike	\$14
Limited Brands	\$10
Adidas Group	\$9
VF Corporation	\$6
Levi Strauss	\$4

Note: We selected 7 companies each from apparel manufacturers and retailers.

Results of Reports Reviewed

6 of 14 companies reviewed publish a non-financial report

Measure current water use: 1 company, 17%

Assess water landscape and water risks: 0

No company mentions having done a water risk assessment, but some of them seem to recognize potential water risks, such as wastewater discharge by textile manufacturers (Nike) and water problems associated with cotton growing (Adidas).

Consult stakeholders: 2 companies, 33%; 0 water specific

Two of the companies report on their stakeholder engagement policy and activities, neither specific to the area of water management.

Engage supply chain: 3 companies, 50%; 1 water specific, 17%

Three companies mention a supply-chain management policy or program, such as supplier “codes of conduct” in their reports; only Nike mentions supply-chain issues specifically in the area of water management. Nike has a policy of reducing the use of water and improving wastewater management standards across its supply base. The company developed Nike Apparel’s Global Water Quality Guidelines, and encourages and works with suppliers to meet their local legal requirement or Nike’s standards, whichever is more stringent. In the area of water conservation, Nike is working with textile suppliers to minimize the use of water resources and promote better water-management practices in process operations.

Establish a water policy and set corollary goals and targets

- **Water statement/policy:** 2 companies, 33%

We know how important it is to protect the world’s water supply, but our experience has shown us that improving water quality is a complex challenge that often requires experimentation and collaboration. (Gap)

Protection of water resources is a pressing global priority. One-third of the world’s population lives in countries suffering from moderate-to-high water stress. Nike is addressing water-related effects because the use of water and the discharge of wastewater from textile production facilities are the largest environmental and community impacts in apparel and textile production. (Nike)

These two companies have independent water sections in their reports.

- **Goals and targets:** 1 company, 17%
 - With numerical/specific targets: 0

- Relating to water use (0), wastewater (1 company, 17%), both (0)

Implement best available technology: 0

Factor water risk into relevant business decisions: 2 companies, 33%

As a part of its site development policy, Target specifies that the developer or contractor identify up to 10 LEED points from Sustainable Site and Water Efficiency categories as defined by the United States Green Building Council. Nike created a life-cycle matrix to identify water-conservation and water-quality measures that are or can/should be implemented for each life-cycle stage including: product creation; materials; manufacturing process; delivery, packaging and logistics; consumer end of life; and corporate operations.

Measure and report performance: 1 company, 17%

- **Measures of performance reported:**
 - Freshwater consumption: 0
 - Wastewater quality: 0
 - Wastewater quantity: 1 company, 17%
 - Water recycling: 0
 - Other: Nike reports its performance by the number of suppliers that are in compliance with its Global Water Program and local wastewater standards, and by percentage of suppliers implementing water efficiency programs.
- **How performance is reported:**
 - Absolute values: 0
 - Normalized: 1 company, 17% - Adidas reports the amount of wastewater discharge per pair of shoes produced.
 - Both absolute/normalized: 0
 - Trends over multiple years: 0
- **Regional/local reporting: 0**
- **Use of reporting guidelines: 3 companies, 50%** use GRI Guideline and have GRI reference tables in their reports. Gap also has the UN Global Compact reference table.

Form strategic partnerships: 5 companies, 83%; 2 water specific, 33%

Nike and Gap participated in the Business for Social Responsibility's apparel water-quality working group. The group focuses on process wastewater issues at the factories, laundries, and textile mills, and plans to update current guidelines and develop strategies for implementation and monitoring.

Commit to continuous improvement: 3 companies, 50%; 0 water specific

Three companies mention that they have an overall policy or management system to achieve continuous improvement in their environmental performance, but none has a specific policy or example in the area of water management.

AUTOMOBILE SECTOR

General Description

The automobile manufacturing sector (NAICS 336111) consists of companies primarily engaged in producing complete automobiles (i.e., body and chassis or unibody) or manufacturing automobile chassis only.

Summary of Findings

Every company reviewed produces an environmental/sustainability report, and close to 90% of them measure and report water use. Overall, the reports include comprehensive water information – all report absolute water use and almost half of the companies report normalized values. This sector has the highest percentage of companies that report freshwater intake by source (33%). Half of the water-reporting companies address both water use and water-quality issues. The focus of information provided in automotive sector reports, however, is on data reporting. Only 33% have an independent water section (the lowest among 11 sectors) and only one company mentions carrying out a water risk assessment.

Results of Reports Reviewed

All 15 companies reviewed publish a non-financial report

Measure current water use: 13 companies, 87%

Assess water landscape and water risks: 1 company, 7%

Peugeot conducts impact studies before building new installations, including an analysis to determine the water requirements of the future facility, such as the percentage of river flow to be withdrawn. When there is a risk of depleting water sources, measures are taken to reduce withdrawals.

15 Companies Reviewed	2005 Sales (U.S. billions)
GM	\$192
Ford	\$178
DaimlerChrysler	\$177
Toyota	\$173
Volkswagen	\$112
Honda	\$81
Nissan	\$80
Peugeot	\$67
Fiat	\$63
BMW	\$60
Renault	\$55
Hyundai	\$51
Volvo	\$30
Mazda	\$25
Suzuki	\$22

Consult stakeholders: 13 companies, 87%; 0 water specific

All but two companies reviewed have stakeholder engagement policies and activities, but none mentions specific examples in the area of water management.

Engage supply chain: 13 companies, 87%; 2 water specific, 13%

Thirteen companies surveyed have a supply-chain management policy or program such as supplier codes of conduct, but only two of them mention specific supplier programs focusing on water management. Toyota has an environmental risk audit program for overseas dealers that evaluates wastewater quality along with other environmental indicators. Ford established the Ford Supplier Sustainability Forum in 2004 to foster communication and information sharing between suppliers and Ford, and to identify areas for collaboration and sharing best practices. During 2004 and 2005, the Forum focused on the issue of global water scarcity.

Establish a water policy and set corollary goals and targets

- **Water statement/policy:** 6 companies, 40%

Formal water statements, when provided, typically address the importance of freshwater resources and the company's commitment to reduce water consumption and protect water sources.

GM works to minimize the impact of water use on nearby communities, particularly where water is scarce. GM uses water as efficiently as possible and ensures that it is treated prior to being returned to its source. (GM)

Our aim in terms of water protection is to use this precious commodity as sparingly as possible and to avoid contaminating water resources. (Daimler-Chrysler)

In order to conserve global water supplies, the Volkswagen Group has introduced comprehensive water saving programs, which include employee awareness campaigns as well as technical measures to create closed-loop systems in production operations. (Volkswagen)

Five companies have an independent water section in their report.

- **Goals and targets:** 7 companies, 47%

- With numerical/specific targets: 5 companies, 33%
- Relating to water use (7 companies, 47%); wastewater (3 company, 20%); both (3 company, 20%).

All five companies setting quantitative targets include water consumption goals. Two of them work towards absolute reduction of water consumption, while others use normalized values/water use efficiency to set their targets, such as per vehicle water consumption.

Implement best available technology: 5 companies, 33%, 3 water specific, 20%

Two companies mention their commitment to use best available technology (BAT) to improve overall environmental performance. Others do not state their commitment to use BAT, but describe projects and programs to reduce water consumption or improve wastewater quality. In addition to pursuing water saving or treatment technologies, Ford developed a patented Water Estimation Tool (WET), a software program that helps facilities to quantify their water usage. Ford then paired WET with WILD (Water Ideas to Lessen Demand), a list of practical ideas for reducing water usage depending on where and when usage is the greatest.

Factor water risk into relevant business decisions: 4 companies, 27%

Peugeot evaluates water risks before building a new facility. Ford's business plans include implementation of water saving practices. Others give examples on how they can create financial benefits by water saving measures. For instance, BMW conducted a Sustainable Value project that calculated the savings through water conservation, by looking at the company's profit per cubic meter of water use, and compared it against 16 other automobile manufacturers. In addition, three companies report water-related expenditures in their report.

Measure and report performance: 13 companies, 87%

- **Measures of performance reported:**
 - Freshwater consumption: 13 companies, 87%
 - Wastewater quality: 6 companies, 40%
 - Wastewater quantity: 5 companies, 33%
 - Water recycling: 2 companies, 13%
 - Other: Mazda reports the amount of rainwater used. Fiat reports water use and water intake separately. Five companies report water use by source.
- **How performance is reported:**
 - Absolute values: 13 companies, 87%
 - Normalized: 7 companies, 47% normalized per vehicle, by unit production, by sales, or by manufacturing cost.
 - Both absolute/normalized: 6 companies, 40%
 - Trends over multiple years: 10 companies, 67%
- **Regional/Local reporting:** 3 companies, 20%, 3 provide facility-level data.
- **Use of reporting guidelines:** 11 companies, 73% of the companies reviewed use GRI Guidelines and 10 of them have GRI reference table. Two Japanese companies also used the Guidelines for Environmental Reporting developed by the Japanese Ministry of the Environment in 2003.

Form strategic partnerships: 14 companies, 93%; 0 water specific

Fourteen out of 15 auto manufacturers report some form of partnership program, but none gives examples in the area of water management.

Commit to continuous improvement: 14 companies, 93%; 3 water specific, 20%

All but one company mention that they have either an overall policy or environmental management system to achieve continuous improvement. Three companies give examples in the area of water management. Ford set a year-over-year 3% reduction goal. In order to encourage continued progress, its environmental engineers are developing single-point lessons that document practices demonstrated to save water. At BMW, plants determine their water consumption and the volume of wastewater per unit produced every month, and they compare the value with the one from the previous year to drive improvement. GM states it uses an ISO 14001 Environmental Management System for its water management.

BEVERAGE SECTOR

General Description

The beverage manufacturing industry (NAICS 3121) includes manufacturers of soft drinks, ice, and bottled water (NAICS 31211); breweries (NAICS 31212); wineries (NAICS 31213); and distilleries (NAICS 31214).

Summary of Findings

Companies in this sector are the most likely to produce reports that include information on water, perhaps because of the key role water plays as an ingredient, rather than for cooling, production, or cleaning typical of other sectors. The percentage of beverage sector companies reporting is higher than average in almost all categories. All but one company have an independent water section and 70% have some form of water statement in their reports. Half of the companies – the highest percentage among 11 sectors – describe a water risk assessment policy or program.

Some of the companies reviewed have been the targets of protests and campaigns by local communities that share drinking water resources with the beverage companies and are concerned with withdrawal of groundwater or with chemical contamination. These incidents have raised awareness about the risk of water conflicts with local communities among the companies in this industry as a whole. Fifty percent of the companies surveyed have a stakeholder consultation policy or program in the area of water management—the highest among the 11 sectors studied. That same percentage reports projects and programs to improve access to safe drinking water.

Although several companies mention and report data on wastewater, the focus of this industry is freshwater consumption. Forty percent – again, the highest among the sectors reviewed – report a quantitative goal for water use. This

10 Companies Reviewed ⁵	2005 Sales (U.S. billions)
PepsiCo	\$33
Coca-Cola Company	\$23
Anheuser-Busch	\$15
Heineken	\$13
Diageo	\$12
InBev	\$12
Cadbury Schweppes	\$11
Kirin	\$10
SABMiller	\$10
Femsa	\$8

⁵ Note: Nestlé, which is a leading producer of bottled water, is analyzed in the Food Manufacturing Sector since the majority of its revenue comes from non-beverage products.

industry has the highest percentage of normalized water use reporting (80%), but the second lowest (50%) for reporting using absolute values. While other sectors have varying normalization methods within their industry, seven out of eight companies with the normalized reporting use the same metric: liters of water used per liter of finished product.

Results of Reports Reviewed

All 10 companies reviewed publish a non-financial report

Measure current water use: 10 companies, 100%

Assess water landscape and water risks: 5 companies, 50%

Half the companies reviewed prepare a water risk assessment. For instance, TCCC recently initiated a comprehensive global risk assessment and conducted a highly detailed study of water issues at local, regional, and global levels to improve its understanding of water-related risks. InBev partnered with the International Business Leaders Forum in 2005/2006 to conduct a risk assessment program on water. Anheuser-Busch created a Water Council that monitors activities that may affect water quality or supply within the watersheds where it operates. SABMiller is planning to assess the “water footprint” in its supply chain. The company also acknowledges that 52% of its current production volume originates from plants operating in countries that have some type of water vulnerability, and that the trend is expected to increase. Its report states, “Our operation must consider the needs of the communities in which they operate to avoid potential conflicts over water use.” SABMiller also recognizes risks associated with climate change. “The issues of water scarcity are likely to become more complex and less predictable as the impact of global climate change is felt.”

Consult stakeholders: 9 companies, 90%; 5 water specific, 50%

All but one of the companies have stakeholder engagement policies or activities and four have stakeholder involvement programs specifically in the area of water management. For instance, Anheuser-Busch’s Water Council works to forge partnerships with key stakeholders to develop initiatives and pursue research in water management. It also has an educational program to raise public awareness about water conservation and watershed protection. InBev describes consultations with local communities on groundwater issues. In 2005, TCCC established 20 community watershed partnerships. While other companies focus on community/external stakeholder engagement, SABMiller’s stakeholder program focuses on internal stakeholders and its employees and provides them education and training to conserve water. Although not a stakeholder consultation by definition, 50% of the companies mention programs to improve access to safe drinking water in local communities and worldwide.

Engage supply chain: 9 companies, 90%; 4 water specific, 40%

All but one of the companies have supply-chain management policies or programs such as supplier codes of conduct. Four of those companies have supplier programs focusing on water management. TCCC states:

We continue to work with our bottling partners worldwide to implement and enhance effective wastewater treatment and conservation processes to achieve compliance with our own strict standards, which often exceed applicable laws.

Anheuser-Busch collaborates with suppliers to understand their water-management strategies and potential supply chain water-related risks. The company surveys its suppliers on water use and meets with the highest-volume users and those located in areas that could potentially face limited water availability. It plans to share best practices among its suppliers. Two companies describe their plans to create supplier programs: Diageo plans to extend responsibility for water management further into its supply chain in order to understand key risks and impacts and to implement best practices; SAB Miller is going to extend its water footprint assessment to the supply chain starting 2006.

Establish a water policy and set corollary goals and targets:

- **Water statement/policy:** 7 companies, 70%

The water statements in beverage sector reports are mainly on the importance of freshwater resources, companies' commitments to reducing water consumption, and either how they use water or why it is important for their business.

We are a hydration company, and our livelihood depends on water. (TCCC)

Water is an important raw material for our business and used as a utility for cleaning, cooling and heating. (Heineken)

Water is one of InBev's most important raw materials, as well as one of the most important environmental resources of the 21st century, due to the increasing demand for of [sic] fresh water. (InBev)

We need to make more beer but using less water. (SABMiller)

Nine companies have an independent water section in their report.

- **Goals and targets:** 8 companies, 80%
 - With numerical/specific targets: 4 companies, 40%
 - Relating to water use: (8 companies, 80%), wastewater (1 company, 10%), both (1 company, 10%). Among the four companies that set quantitative goals for water-use reduction, three use normalized values

such as “reduce water use per liter or product to 7 liter.” Some have long-term (five-year) goals, while others set goals and action items every year.

Implement best available technology: 5 companies, 50%; 3 water specific, 30%

Two companies state their commitment to use innovation and best available technology to improve their environmental performance in general, but not specifically in the area of water management. The others do not clearly state their commitment to use BAT, but describe projects and programs that use cutting-edge technologies to reduce water consumption. These technologies are typically some form of water treatment such as reverse osmosis or installation of new water recycling processes. For instance, InBev invested in water- and energy-saving anaerobic wastewater treatment combined with bio-gas energy recovery.

Factor water risk into relevant business decisions: 3 companies, 30%

Two companies describe their effort to link financial and water issues. PepsiCo uses its “Capital Expenditure Filter” (CEF) that ensures that sustainability issues are formally considered in all major capital expenditure proposals. Kirin uses an environmental accounting program to measure the impact of water use in business and the financial benefits derived from water conservation projects. The company also recognizes the link between water conservation and energy savings in its report. TCCC uses the results of a global risk assessment of water resources to develop water strategies in their operations.

Measure and report performance: 9 companies, 90%

- **Measures of performance reported:**
 - Freshwater consumption: 8 companies, 80%
 - Wastewater quality: 3 companies, 30%
 - Wastewater quantity: 3 companies, 30%
 - Water recycling: 0
 - Other: One company reports wastewater discharge volume by destinations (the sea, estuary, municipal sewer). Three companies report water use by source.
- **How performance is reported:**
 - Absolute values: 5 companies, 50%
 - Normalized: 8 companies, 80% (7 companies by unit product and 1 by sales)
 - Both absolute/normalized: 5 companies, 50%
 - Trends over multiple years: 8 companies, 80%
- **Regional/Local reporting: 2 companies, 20%; 2 provide facility-level data**

- **Use of reporting guidelines:** 8 companies, 80% have a GRI reference table in their reports. One company does not have the reference table, but mentions it uses GRI Guidelines to produce their report. In addition to GRI, Kirin uses the Environmental Reporting Guideline developed by the Japanese Ministry of the Environment.

Form strategic partnerships: 8 companies, 80%; 5 water specific, 50%
Among the eight companies that have partnerships with various stakeholder groups, five specifically mention programs in the area of water management. Some list groups they work with in the area of water management, including governments, municipalities, suppliers, local communities, non-governmental organizations, and other companies. Others create funding programs for water-related research or projects, such as TCCC participation in the Global Water Challenge to improve water access and sanitation, Diageo's financial contribution to African Medical Research Foundation on a project to rehabilitate polluted boreholes in Africa, and Cadbury Schweppes' freshwater well-building program with WaterAid, a UK-based NGO. Another type of partnership involves working with industry associations to share and improve their water-management practices. InBev and Anheuser-Busch participate in water-related programs by International Business Leaders Forum and Global Environmental Management Initiative, respectively.

Commit to continuous improvement: 8 companies, 80%, 0 water specific

Eight companies describe that they have either an overall policy or management system to achieve continuous improvement, but none gives specific examples regarding how it is applied to water management.

BIOTECHNOLOGY/ PHARMACEUTICAL SECTOR

General Description

This industry is a sub-sector of the chemical manufacturing industry (NAICS 325) and comprises manufacturers of pharmaceutical products. The NAICS code for this industry is 3254 - pharmaceutical and medicine manufacturing.

Summary of Findings

Overall, companies in this sector have the most comprehensive approaches to water reporting. Every company reviewed publishes an environmental/sustainability report. The sector has the second highest percentage of companies that report water use (92%) and a significant majority report wastewater quality as well (62%). The highest among the 11 sectors, 69% report water performance data both in absolute and normalized values.

This sector's reports also provide more information about companies' water policy and management compared to the other sectors. For instance, 92% of the companies have a water section in their report, and 31% describe how they incorporate water-related risks into their business strategy. However, while companies in this industry have relatively comprehensive reports, most fail to recognize or report the issues beyond their immediate boundary: none mentions suppliers' water management practices and only one company talks about stakeholder consultation or engagement practices in the area of water management.

13 Companies Reviewed	2005 Sales (U.S. billions)
Pfizer	\$51
Johnson & Johnson	\$50
Bayer	\$40
GlaxoSmithKline	\$37
Sanofi-Aventis	\$32
Novartis	\$31
Roche	\$27
AstraZeneca	\$23
Abbott	\$22
Merck & Co	\$22
Wyeth	\$19
Bristol-Myers Squibb	\$19
AkzoNobel	\$15

Results of Reports Reviewed

All 13 companies reviewed publish a non-financial report

Measure current water use: 12 companies, 92%

Assess water landscape and water risks: 2 companies, 15%

AkzoNobel developed a comprehensive sustainable water management model that tracks multiple indicators to ensure that the combined users of certain sources use less water than is replenished by natural processes, and that water quality of the source is not affected. The indicators used include: water source and its natural replenishment; consumption from the water source; recycling; emission of COD and other pollutants; energy required for water processing; chemicals used for water processing; and ecological effects of unsustainable management. Abbott does not mention specific water risk assessment programs, but acknowledges water risks in their report:

We use approximately 17 billion gallons per year to manufacture our products, and approximately 20 percent of our manufacturing sites are located in water-stressed areas. By 2025, based on our current manufacturing locations, it is projected that two-thirds of Abbott's plants will be located in water-stressed areas, including China, France, Germany, India, Italy, Japan, Mexico, Pakistan, South Africa, Spain, Switzerland and the United States.

Consult stakeholders: 11 companies, 85%; 1 water specific, 8%

All but two companies describe their stakeholder engagement policy and activities in their report, but only one of them is in the area of water management. In its water policy document, "Access to Water – Position Statement," Abbott identifies stakeholder outreach as one of its three water management action items. Under this action item, the company aims to educate communities and work with others to share its approach and success, and to learn from their actions.

Engage supply chain: 10 companies, 77%; 0 water specific

Ten out of 13 companies have supply-chain management policies or programs such as supplier codes of conduct, but none is specific to the area of water management.

Establish a water policy and set corollary goals and targets:

- **Water statement/policy:** 9 companies, 69%

The water statements in the biotechnology/pharmaceutical industry reports focus mainly on the importance of freshwater resources, how water is used or why water is important for their business, and the company's commitment to reduce water consumption.

Water is a fragile limited and unevenly distributed natural resource and must be efficiently used and preserved. (Sanofi-Aventis)

The earth has a limited water supply and only one percent of the freshwater on the planet is available for people's needs. This makes the development and implementation of sustainable practices for water conservation and reuse critical. (Johnson & Johnson)

With industry accounting for around 22% of the world's total consumption of fresh water, industrial firms have a responsibility to take action to reduce the burden they place on the availability of fresh water supplies. (AkzoNobel)

Twelve out of 13 companies reviewed have an independent water section in their report.

- **Goals and targets:** 9 companies, 69%
 - With numerical/specific targets: 6 companies, 46%
 - Relating to water use (5 companies, 38%), wastewater (3 companies, 23%), both (2 companies, 15%). Of the six companies that set quantitative goals to reduce water use, four use normalized values, such as “reduce water use per unit production by 5% in 5 years.” Bristol-Meyers Squibb sets separate goals for water stressed areas: 10% reduction in water use from baseline year in general, and 20% reduction in countries where water resources are severely stressed.

Implement best available technology: 6 companies, 46%, 5 water specific, 38%

One company states its commitment to use best available technology to improve its environmental performance. The other five companies do not state such a commitment, but describe projects and programs that use cutting-edge technologies to reduce water consumption or to treat water quality. These technologies are typically some form of pre-water or wastewater treatment such as reverse osmosis or installation of new water recycling processes.

Factor water risk into relevant business decisions: 4 companies, 31%

Bayer considers global water demand along with climate change when developing all its products. It aims to attain a specific sustainability advantages by incorporating these environmental factors into its decision making. As one of the action items identified in its position statement on water, Abbott works to design its products so less water is consumed during their use. Merck is developing a methodology to assign a cost structure to water that reflects its true value. Merck's report also recognizes the links between energy and water consumption.

Measure and report performance: 12 companies, 92%

- **Measures of performance reported:**
 - Freshwater consumption: 12 companies, 92%
 - Wastewater quality: 8 companies, 62%
 - Wastewater quantity: 3 companies, 23%
 - Water recycling: 2 companies, 15%
 - Other: Two companies report water use separately for cooling water and contact water. One company reports water intake and actual water consumption separately. Another company reports wastewater discharge volume by destination (sea, estuary, municipal sewer). Four companies report water use by source.
- **How performance is reported:**
 - Absolute values: 12 companies, 92%
 - Normalized: 9 companies, 69% - typically by unit production or sales
 - Both absolute/normalized: 9 companies, 69%
 - Trends over multiple years: 9 companies, 69%
- **Regional/Local reporting:** 1 company, 8%; 0 provide facility-level data
- **Use of reporting guidelines:** 10 companies, 77% use the GRI Guidelines and 9 include the GRI reference table. Roche uses the GRI Water Protocol.

Form strategic partnerships: 11 companies, 85%; 4 water specific, 31%

Among the 11 companies that report partnership programs with stakeholder groups, 4 describe their efforts in the area of water management. Some work with local governments or communities to raise awareness in water conservation, while others partner with research organizations, civil society groups, and trade associations on water issues. Abbott has a policy to “engage with other water users and providers to promote appropriate water management principles and address challenges,” and has been working with the Global Environmental Management Initiative, United States Council for International Business, and Pharmaceutical Research and Manufacturers of America. Bayer created a funding program with National Geographic Germany to support research projects on drinking water supply.

Commit to continuous improvement: 10 companies, 77%; 1 water specific, 8%.

One company (Abbott) mentions continuous improvement specifically in the area of water management. Its water policy commits the company to continuously improve its water usage efficiency and water discharge quality within its worldwide manufacturing operations. Nine companies have either a general policy or environmental management system to achieve continuous improvement, but do not provide specific examples of how it is applied to their water management.

CHEMICAL SECTOR

General Description

The chemical manufacturing sector (NAICS 325) is based on the transformation of organic and inorganic raw materials by a chemical process and the formulation of products. This industry comprises the following sub-sectors: basic chemical manufacturing (NAICS 3251); resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing (NAICS 3252); pesticide, fertilizer, and other agricultural chemical manufacturing (NAICS 3253); paint, coating, and adhesive manufacturing (NAICS 3255); and soap, cleaning compound, and toilet preparation manufacturing (NAICS 3256). Pharmaceutical and medicine manufacturing (NAICS 3254) is a sub-sector of this industry, but is analyzed separately in this study.

Summary of Findings

All but one company in this sector publish environmental/sustainability reports. However, only 67% measure and report water use—the second lowest among 11 sectors. The information in chemical sector water reports is often limited to quantitative performance data—only one company has a water policy or statement and only three mention water use goals. No company mentions water-related risks or risk assessment programs.

Results of Reports Reviewed

9 of 10 companies reviewed publish a non-financial report

Measure current water use: 6 companies, 67%

Assess water landscape and water risks: 0

Consult stakeholders: 8 companies, 89%; 0 water specific

Eight companies mention their stakeholder engagement policies and activities in their reports, but none has a program or example in the area of water management.

10 Companies Reviewed	2005 Sales (U.S. billions)
Procter & Gamble	\$62
BASF Group	\$51
Dow	\$46
Dupont	\$28
Mitsubishi Chemical	\$20
Lyondell Chemical	\$19
Saudi Basic Ind.	\$18
Degussa	\$15
Huntsman	\$13
Asahi Kasei	\$13

Engage supply chain: 7 companies, 78%, 0 water specific

Seven companies mention their supply-chain management policies or programs such as supplier codes of conduct in their report, but none gives an example specifically in the area of water management.

Establish a water policy and set corollary goals and targets:

- **Water statement/policy: 1 company, 11%**

Only one company provides a policy statement pertaining to water:

P&G has chosen to focus on water because we have a great deal of expertise in this area and tremendous capability to improve life for people with insufficient access to clean water. In addition, water is integral to the use and disposal of most P&G products; nearly 85 percent of them have some connection with household water use. (P&G)

Five companies have an independent water section in their report.

- **Goals and targets: 4 companies, 44%**

- With numerical/specific targets: 3 companies, 33%
- Relating to water use (3 companies, 33%), wastewater (2 companies, 22%), both (2 companies, 20%).

Implement best available technology: 1 company, 11%; 0 water specific

One company (P&G) mentions its general commitment to use best available technology. Its report, however, does not provide a specific example or policy in the area of water management.

Factor water risk into relevant business decisions: 1 company, 11%

One company (P&G) extensively reports its effort to develop and distribute a portable water purification options that can provide safe drinking water to “help achieve the UN Millennium Development Goals of safe drinking water.” It sees the UN goals on access to drinking water and sanitation as a business opportunity. The company also recognizes the importance of water in their business, stating in their report;

Water is integral to the use and disposal of most products; nearly 85 percent of them have some connection with household water use and can be used to improve access to safe drinking water.

Measure and report performance: 8 companies, 89%

- **Measures of performance reported:**

- Freshwater consumption: 6 companies, 67%
- Wastewater quality: 6 companies, 67%
- Wastewater quantity: 2 companies, 22%
- Water recycling: 0

- Other: Dow reports water consumption by usage (agriculture, cooling, mining, potable, process, steam transfer). Two companies report water use by source.
- **How performance is reported:**
 - Absolute values: 8 companies, 89%
 - Normalized: 3 companies, 33% - all three companies use per-production-unit to normalize water consumption or wastewater discharge volume/quality.
 - Both absolute/normalized: 3 companies, 33%
 - Trends over multiple years: 8 companies, 89%
- **Regional/Local reporting:** 1 company, 11%; 1 provides facility-level data
- **Use of reporting guidelines:** 5 companies, 56% use GRI Guidelines, and 4 have GRI reference table in their reports. Two Japanese companies use Environment Report Guidelines developed by the Japanese Ministry of the Environment in 2003.

Form strategic partnerships: 8 companies, 89%; 1 water specific, 11%
 Every company in this sector that publishes an environmental/sustainability report has partnership programs, but only one mentions examples in the area of water management. P&G launched the Children's Safe Drinking Water program and collaborated with various organizations including UNICEF, Red Cross, Johns Hopkins University, and Safe Drinking Water Alliance.

Commit to continuous improvement: 8 companies, 89%; 0 water specific

All reporting companies mention a general policy or management system to achieve continuous improvement in their environmental performance. However, none offers specific examples in the area of water management.

FOOD MANUFACTURING SECTOR

General Description

The food manufacturing industry (NAICS 311) transforms livestock and agricultural products into products for intermediate or final consumption. The industry has a wide variety of sub-sectors, each processing different raw materials: animal food manufacturing (NAICS 3111); grain and oil seed milling (NAICS 3112); sugar and confectionary product manufacturing (NAICS 3113); fruit and vegetable preserving and specialty food manufacturing (NAICS 3114); dairy product manufacturing (NAICS 3115); animal slaughtering and processing (NAICS 3116); seafood product preservation and packaging (NAICS 3117); and bakeries and tortilla manufacturing (NAICS 3118). Food manufacturers that are primarily engaged in producing beverage are categorized in NAICS 312 –Beverage and Tobacco Manufacturing, and analyzed in the beverage industry section of this study. Some of the companies analyzed in this section also produce beverage products.

Summary of Findings

Overall, companies in this sector have comprehensive water reporting. Every company that publishes a non-financial report measures and reports freshwater consumption. Some of those companies provide very detailed water information. For instance, Nestlé published an independent water report in addition to its sustainability report both in 2005 and 2006. The range between the most comprehensive and sophisticated reports and substandard ones is particularly pronounced in this industry sector. The companies that have bottled water or beverage businesses tend to do more comprehensive water reporting. The water reporting in this industry focuses relatively more on freshwater use, and less on wastewater discharge volume/quality. This industry has the second lowest percentage of companies (70%) that publish environmental/sustainability reports

10 Companies Reviewed	2005 Sales (U.S. billions)
Nestlé	\$76
Unilever	\$49
Archer Daniels Midland	\$36
Kraft	\$34
Tyson Foods	\$26
Bunge	\$24
McDonald's	\$20
Sara Lee	\$19
Groupe Danone	\$15
ConAgra	\$14

Results of Reports Reviewed

7 of 10 companies reviewed publish a non-financial report

Measure current water use: 7 companies, 100%

Assess water landscape and water risks: 3 companies, 43%

Nestlé has a dedicated department responsible for water-resource management, including water risk assessment such as identification and selection of a water resource and monitoring of hydrogeological conditions of the sites. Unilever is developing tools to understand its impacts on water resources and to set individualized targets for each business unit based on various types of water-related risks and challenges. As a part of its groundwater resources policy, Groupe Danone is committed to implement measures to protect each water resource according to local conditions, and evaluates the hydrological and geological characteristics of water resources and the human environment of its sites.

Consult stakeholders: 5 companies, 71%; 3 water specific, 43%

Five companies mention stakeholder engagement policies or programs in their reports, and three of them have examples in the area of water management. According to Nestlé's report, its stakeholder engagement focuses on water conservation and access. Activities include water education, expertise sharing, and programs to improve the local population's access to water. Unilever reports that engaging with local communities is critical to managing its water imprint, particularly in regions of high water stress. Groupe Danone cooperates with farmers, communities, and other local stakeholders to draw up guidelines for sustainable water management. It also appoints a local manager to oversee the operation of each spring in partnership with local communities and participants from the local economy.

Engage supply chain: 6 companies, 86%; 4 water specific, 57%

Six companies mention a supply-chain management policy or program such as supplier codes of conduct in their report, and four of them have specific examples in the area of water management. McDonald's developed an Environmental Scorecard program and measures environmental performance of direct suppliers, including water use, energy use, solid waste, and air emission. The company also measures and reports water used in the supply chain by commodity area (potatoes, poultry, pork, beef, and buns). Unilever's Sustainable Agriculture Programme measures farm-level water impacts. Groupe Danone cooperates with farmers on water conservation. Nestlé reports that it takes measures to preserve water resource and reduce water effluents at each step in the supply chain. It also works with agricultural suppliers to promote water conservation among farmers.

Establish a water policy and set corollary goals and targets:

- **Water statement/policy:** 6 companies, 86%

The water statements in the food sector are mainly on the importance of freshwater resources and companies' commitment to protect water resources, as well as on how water is used or why water is important for their business.

Fresh water is crucial at every stage of our product life-cycle, from production and processing of raw materials to consumers using and disposing of our products. (Unilever)

Water conservation has been an ongoing focus area for Kraft because a clean and plentiful water supply is of utmost importance to manufacture our products. (Kraft)

For many years, Tyson Foods has worked to conserve water to reduce our environmental impacts and operational costs. Comparatively, we use more water than non-food industries because maintaining sanitation and food safety is of paramount importance to us, and this constrains our ability to reduce water consumption. Our goal is to conserve water where possible while maintaining the highest food safety standards. (Tyson Foods)

As a leader of the bottled water market, it is the duty of (Groupe Danone) to ensure the sustainable management of the natural and patrimonial resources it uses. This is of the utmost importance for the development of the Group's brands and their image and can only occur through the Group's commitment to local environments. (Groupe Danone).

Nestlé states its commitment to use water resources sustainably as the world's largest food and beverage company, but also explains that the company's use of freshwater resources is relatively small, just 0.005% per year of the total estimated freshwater withdrawal worldwide. Also, four companies reviewed have an independent water section in their report.

- **Goals and targets:** 5 companies, 71%

- With numerical/specific targets: 2 companies, 29%
- Relating to water use (5 companies, 71%), wastewater (3 companies, 43%), both (3 companies, 43%).

Implement best available technology: 4 companies, 57%; 4 water specific, 57%

Four companies describe projects and programs that use cutting-edge technologies to reduce water consumption.

(Nestlé) directs its worldwide research and development network towards the innovation and renovation of its products and processes, including manufac-

turing methods that minimize water consumption and waste water generation.

Unilever has an “eco-innovation” program on water use reduction. McDonald’s works with major suppliers of water filtration systems and chemical cleaning products for its restaurants so that it can evaluate filtration/cleaning technologies that can protect water resources.

Factor water risk into relevant business decisions: 1 company, 14%

Unilever reports that water stress represents a growing issue for sustainable development and acknowledges that it is an increasingly critical factor not only in its own operation, but also for consumers. The company develops product that help consumers save water for cooking or washing.

Measure and report performance: 7 companies, 100%

- **Measures of performance reported:**
 - Freshwater consumption: 7 companies, 100%
 - Wastewater quality: 2 companies, 29%
 - Wastewater quantity: 2 companies, 29%
 - Water recycling: 0
 - Other: Unilever reports estimated water use breakdown by life-cycle stage (raw materials, packaging, manufacturing, consumer use). Nestlé reports water-related expenses.
- **How performance is reported:**
 - Absolute values: 6 companies, 86%
 - Normalized: 3 companies, 43% - all three companies calculate water-use efficiency per ton of product; one reported farm-water-use-per-pig.
 - Both absolute/normalized: 2 companies, 29%
 - Trends over multiple years: 7 companies, 100%
- **Regional/Local reporting:** 1 company, 14%; provides facility-level data
- **Use of reporting guidelines:** 4 companies, 57% use GRI Guidelines. Each has a GRI reference table in their report.

Form strategic partnerships: 6 companies, 86%; 4 water specific, 57%

Six reports mention some form of partnership program, with four having examples specifically on water management. Unilever participated in the World Business Council for Sustainable Development’s water scenarios project in the past two years. The project provides new insights into the linkages between technological progress, social economic and environmental change, and water governance. Unilever also participates in Water and Sanitation for the Urban Poor, a partnership between the private, public, and civil society sectors that seeks to demonstrate new approaches to meeting the water, sanitation, and hygiene needs of low income consumers in urban areas of developing and emerging markets. Groupe Danone is an active partner in the Ramsar Con-

vention for the protection of wetlands. Smithfield sponsors World Water Monitoring Day in the communities where the company operates.

Commit to continuous improvement: 5 companies, 71%; 3 water specific, 43%

Five reports mention a policy or management system to achieve continuous improvement of their environmental performance, three of which offer specific examples in the area of water performance. Nestlé “strives for continuous improvement in the management of water resources,” and uses environmental management systems to achieve its goal. Unilever claims to have been able to maintain continuous improvements in water use through innovative projects run at the factory level.

FOREST PRODUCTS SECTOR

General Description

The forest products industry consists of wood product manufacturing (NAICS 321) and paper manufacturing (NAICS 322). The wood product manufacturing sector makes lumber, plywood, veneers, wood containers, wood flooring, wood trusses, manufactured homes (i.e., mobile homes), and prefabricated wood buildings. The paper manufacturing sector focuses on pulp, paper, or converted paper products and is subdivided into two industry groups: manufacturing pulp and paper and manufacturing converted paper products. Some of the companies included in this study also grow and harvest their own timber.

Summary of Findings

Overall, the environmental/sustainability reports by the forest products sector provide some of the most comprehensive water-related information. Every company reviewed publishes an environmental/sustainability report including information on water. The sector also has the highest percentage of companies (50%) that provide facility-based water data. Compared to the other sectors studied, this sector focuses more on wastewater than freshwater water consumption. It has the highest percentage of wastewater volume reporting (50%) and wastewater quality reporting (90%). One company (Nippon Paper) argues that the industry has exhausted water conservation measures after 30 years of water conservation efforts. Companies in the forest product sector – particularly paper manufacturers – are well aware of the importance of water resources for their businesses. Ninety percent have a water section in their report and 70% have a water statement that describes both freshwater and wastewater issues they are facing.

10 Companies Reviewed	2005 Sales (U.S. billions)
International Paper	\$24
Weyerhaeuser	\$23
Georgia-Pacific	\$18
Kimberly-Clark	\$16
Stora Enso	\$16
SCA-Svenska Cellulose	\$12
Oji Paper	\$11
UPM-Kymmene	\$11
Nippon Paper	\$11
Smurfit Stone	\$8

Results of Reports Reviewed

All 10 companies reviewed publish a non-financial report

Measure current water use: 9 companies, 90%

Assess water landscape and water risks: 3 companies, 30%

SCA has a risk assessment program that looks at hydrological considerations and water emissions in order to evaluate companies for acquisition. In addition, the report's risk management section has a detailed description on how SCA recognizes and manages water risks. Stora Enso and International Paper do not mention a formal water risk assessment program, but they recognize water-related risks in their report, such as possible conflict over competing demands between the facility and local communities or severe drought in low rainfall areas.

Consult stakeholders: 7 companies, 7%; 0 water specific

Seven companies have some form of stakeholder engagement policy or program, but none has examples in the area of water management.

Engage supply chain: 8 companies, 80%; 0 water specific

Eight companies have supply-chain management policies or programs such as supplier codes of conduct, but none has examples in the area of water management.

Establish a water policy and set corollary goals and targets:

- **Water statement/policy:** 7 companies, 70%

The water statements in the forest products sector reports mainly address the importance of freshwater resources, and companies' commitment to reduce water consumption and improve water quality, as well as how water is used and why water is important for their business.

Water is one of the most important resources needed in the paper making process. Adequate water supply access is critical to the viability of any paper mill. (International Paper)

The paper industry requires huge amounts of industrial water. Paper quality cannot be ensured unless pulp fiber is diluted with water during the paper-making process at a ratio of about 0.5% pulp to 99.5% water. (Oji Paper)

Water consumption by the paper industry occupies more than 20% of all industries in Japan. (Nippon Paper)

Nine companies have an independent water section in their report.

- **Goals and targets:** 6 companies, 60%
 - With numerical/specific targets: 3 companies, 30%
 - Relating to water use:(3 companies, 30%), wastewater (5 company, 50%), both (3 company, 30%). All three companies that set quantitative goals for water consumption reduction or wastewater quality improvement use normalized values for their targets, such as, “Reduce the amount of process water we use in our tissue operations to levels of 30 cubic meters per metric ton of production.”

Implement best available technology: 7 companies, 70%; 4 water specific, 40%

Three companies state their commitment to use innovative/best available technology to improve their environmental performance. One company (Kimberly-Clark) explains its commitment to use BAT for wastewater treatment:

Our facilities focus on strategic wastewater management, water reclamation opportunities and technology upgrades. Virtually all facilities now meet best demonstrated technology discharges standards for water quality.

The other three companies do not clearly state their commitment to use BAT but describe projects and programs that use cutting-edge technologies, mostly in the form of wastewater treatment. Examples include chlorine-free bleaching processes and anaerobic wastewater treatment combined with bio-gas energy recovery.

Factor water risk into relevant business decisions: 1 company, 10%

Although a large majority of companies in this industry recognize the importance of water resources for their business, only one company (SCA) mentions its effort to incorporate water risks into the decision making. SCA uses a risk assessment program to look at hydrological considerations and water emissions when evaluating sites for acquisition.

Measure and report performance: 10 companies, 100%

- **Measures of performance reported:**
 - Freshwater consumption: 7 companies, 70%
 - Wastewater quality: 9 companies, 90%
 - Wastewater quantity: 5 companies, 50%
 - Water recycling: 1 company, 10%
 - Other: One company reports the cost of preventing water pollution and another reports wastewater discharge by source (e.g., process water, cooling water, from production). One company reports water use by source.

- **How performance is reported:**
 - Absolute value: 7 companies, 70%
 - Normalized: 4 companies, 40% normalize values by ton of production
 - Both absolute/normalized: 2 companies, 20%
 - Trends over multiple years: 9 companies, 90%
- **Regional/Local reporting:** 5 companies, 50% - each provides facility-level data
- **Use of reporting guidelines:** 7 companies, 70% use GRI Guidelines, and 6 have GRI reference table in their reports

Form strategic partnerships: 10 companies, 100%; 3 water specific, 30%

Every report mentions some form of partnership program. Three have examples in the area of water management: examples of collaborations with municipal government or local water authorities in the area of wastewater treatment.

Commit to continuous improvement: 8 companies, 80%; 1 water specific, 10%

Nine company reports mention a policy or management system to achieve continuous improvement. One company (Weyerhaeuser) specifically mentions that it “continually works to improve water quality, in particular by reducing biodegradable organic materials in wastewater.”

HIGH-TECH/ELECTRONICS SECTOR

General Description

According to AeA (formerly the American Electronic Association), the trade association for the high-tech industry, the sector includes companies whose principal business either designs, manufacturers, or conducts research in electronics, electronic components, telecommunications, software, the Internet, or related information technology products and services. For this study, we focus on computer and electronic product manufacturing (NAICS 334), particularly computer and peripheral equipment manufacturing (NAICS 3341) and semiconductor and other electronic component manufacturing (NAICS 3344).

Summary of Findings

All companies reviewed have environmental/sustainability reports and 13 report their water-management performance. The reports in this sector tend to focus more on quantitative data. Qualitative and descriptive information such as water policies, water risk assessments, and water-management strategies are not well covered. This sector has the highest percentage of companies (47%) reporting quantitative/specific water conservation goals. Five companies report water performance in normalized values (unit of sales). Some companies in this sector do not measure or consider the water use and wastewater discharge associated with the actual manufacturing processes, which are increasingly tasked to contractors and suppliers.

15 Companies Reviewed	2005 Sales (U.S. billions)
IBM	\$91
HP	\$87
Matsushita Electric	\$81
Samsung	\$79
Sony	\$67
Dell	\$56
Toshiba	\$54
NEC	\$45
LG	\$44
Fujitsu	\$44
Nokia	\$40
Intel	\$38
Motorola	\$37
Canon	\$32
Cisco	\$26

Results of Reports Reviewed

All 15 companies reviewed publish a non-financial report

Measure current water use: 13 companies, 87%

Assess water landscape and water risks: 2 companies, 13%

Motorola conducts environmental impact assessments that include evaluation of water consumption and wastewater releases. According to its report, Intel views water management from a holistic, life-cycle perspective. Early in the site-selection process, Intel looks at the water supply necessary to run its operations and then examines how it would use water in its operations.

Consult stakeholders: 15 companies, 100%; 0 water specific

Every company mentions their stakeholder engagement policy and programs, but none gives specific examples related to water management.

Engage supply chain: 15 companies, 100%; 0 water specific

Every company reviewed has a supply-chain management policy or program such as supplier codes of conduct, but none gives a specific example in the area of water management.

Establish a water policy and set corollary goals and targets:

- **Water statement/policy:** 6 companies, 40%

The water statements in this sector's reports are typically about the importance of freshwater resources and companies' commitments to reduce water consumption.

HP's largest water use is for cooling. We recognize that water consumption is a growing concern, particularly in water-stressed regions. Many of our sites work to reduce water consumption. (HP)

Dell recognizes the importance of conserving water resources. Because water is not used in Dell's manufacturing processes, virtually all of our water use occurs in building operations, such as for air humidification and cooling, landscape irrigation, food preparation in cafeterias and canteens, restrooms, and in general cleaning and housekeeping. (Dell)

A sustainable water resource is essential for a healthy community, balanced growth, a high quality of life and Intel's business. With some of our key manufacturing sites in arid locations, we recognize that prudent water management is an essential component of our overall business success. (Intel)

Seven companies have an independent water or wastewater section in their report.

- **Goals and targets: 9 companies, 60%**
 - With numerical/specific targets: 7 companies, 47%
 - Relating to water use (7 companies, 47%), wastewater (3 companies, 20%), both (2 companies, 13%). Of the six companies that set quantitative goals to reduce water use, four use normalized goals such as “reduce water use per unit production by 5% in 5 years.” IBM has a separate water-saving goal for the water-intensive business unit (semiconductor division).

Implement best available technology: 5 companies, 33%; 4 water specific, 27%

One company mentions its commitment to use best available technology to improve its overall environmental performance. Four companies report their use of cutting-edge technologies to reduce water consumption. For instance, Intel invested more than \$30 million for state-of-the-art water conservation technologies in Arizona. It also implemented a reverse osmosis system in New Mexico, which improved the efficiency of its ultra-pure water use. As a result, the site saved 500 million gallons of water per year.

Factor water risk into relevant business decisions: 1 company, 7%

Intel reports its effort to incorporate water issue into business decisions. The company sets a goal to make “water management a part of everyday operations.” Intel’s water engineers and strategic management council work together, driving capital improvement projects for new manufacturing process technologies and setting water conservation priorities as part of factory planning.

Measure and report performance: 13 companies, 87%

- **Measures of performance reported:**
 - Freshwater consumption: 12 companies, 80%
 - Wastewater quality: 5 companies, 33%
 - Wastewater quantity: 7 companies, 47%
 - Water recycling: 2 companies, 13%
 - Other Sony reports “water conservation contribution,” which is the estimated amount of groundwater replenished through its water cultivation project. Fujitsu reports water consumption per personal computer (both desktop and notebook) for each life-cycle stage including manufacturing, distribution/sales, usage, and collection/recycling. One company reports water use by source.
- **How performance is reported:**
 - Absolute values: 9 companies, 60%
 - Normalized: 5 companies, 33% - all by unit of production or by sales
 - Both absolute/normalized: 2 companies, 13%

- Trends over multiple years: 9 companies, 60%
- **Regional/Local reporting:** 3 companies, 20%, 1 company provides facility-level data
- **Use of reporting guidelines:** 12 companies, 80% use GRI Guidelines, 9 of them include the GRI reference table

Form strategic partnerships: 15 companies, 100%, 1 water specific

Every company reviewed mentions some form of partnership program in their report. However, only one company gives specific examples in the area of water management. In 2005, Intel adopted a new water conservation strategy that focuses not only on its internal efforts but also on how it can: share its expertise and learning with other businesses; promote water conservation education and awareness in its local communities; and collaborate with universities, water suppliers, governments, and water users to solve the most pressing regional water challenges.

Commit to continuous improvement: 12 companies, 80%; 2 water specific, 13%

Ten reports mention a policy or use of environmental management system to achieve continuous improvement but do not give specific examples of how it is applied to their water management. Two companies describe their effort to incorporate continuous improvement into their water management. For instance, Intel says its business requires constant production process changes/improvements and uses these opportunities to apply new water-efficiency technologies.

METAL/MINING SECTOR

General Description

The mining sector (NAICS 212) primarily engages in mining, mine site development, and preparing metallic minerals and non-metallic minerals, including coal, for further refining or direct use. The term “mining” is used in the broad sense to include ore extraction, quarrying, and beneficiating (e.g., crushing, screening, washing, sizing, concentrating, and flotation) customarily done at the mine site. Sub-sectors in this industry include: coal mining (NAICS 2121); metal ore mining (NAICS 2122); and non-metallic mineral mining (NAICS 2123). Some companies in this sector also engage in primary metal manufacturing, (NAICS 331), which includes processes such as smelting, refining, rolling, and casting. Sub-sectors of this industry include: iron and steel mills and ferro-alloy manufacturing (NAICS 3311); steel product manufacturing from purchased steel (NAICS 3312); alumina and aluminum production and processing (NAICS 3313); non-ferrous metal (sans aluminum) production and processing (NAICS 3314); and foundries (NAICS 3315).

Summary of Findings

The reports by this sector show recognition of the environmental impacts and risks associated with the volume of water used. It has the second highest percentage of companies that mention risk assessment programs in their reports (40%) and a large majority have water statements and independent water sections as well. Every report provides water information. Compared to the other sectors reviewed, the companies in this industry pay relatively more attention to their water-related impacts in local communities. This sector has the highest percentage of facility-based reporting (60%) and many of the reports state the problems associated with the competing water demands in communities where they operate. This could be explained by the relatively large size and small number of facilities in this sector.

12 Companies Reviewed	2005 Sales (U.S. billions)
ThyssenKrupp	\$50
Arcelor	\$39
Nippon Steel	\$31
BHP Billiton	\$30
AngloAmerican	\$27
Mittal Steel	\$27
Alcoa	\$26
JFE Holdings	\$26
POSCO	\$23
Alcan	\$21
Rio tinto	\$18
Corus Group	\$18

The mining sector has the highest percentage of companies that report wastewater quality. It also has the highest percentage of companies that report water

recycling rates or recycling amounts. This may be due to the large percentage of non-contact water used for cooling, which requires less treatment for recycling/reuse.

The water-use reporting methods in this industry are less standardized compared to the other sectors. Various definitions and methods are used to report “water use,” including: “industrial water,” “water used for primary activities,” “process water use,” “industrial water input,” and “freshwater withdrawal.”

Results of Reports Reviewed

10 of 12 companies reviewed publish a non-financial report

Measure current water use: 10 companies, 100%

Assess water landscape and water risks: 4 companies, 40%

Arcelor has a policy of booking provisions to cover environmental risks, including ground and surface water. As part of a water strategy developed in 2005, Rio Tinto conducts an assessment of water management at 15 key sites to provide businesses with a baseline of their water performance. Recognizing that its business often competes with agriculture and other human activities for access to water resources, BHP established water-management plans that require sites to identify water sources, water consumption, and opportunities to reduce water usage. Anglo American does not mention a specific risk assessment program, but recognizes water-related risks in its report:

Growing pressure on water resources has resulted in greater risks to business, resulting in increasing user and pollution charges, uncertainty over supply and ever-increasing regulation. Our operations are significant users of water and we are located in environments that range from arid deserts to water abundant.

Consult stakeholders: 10 companies, 100%; 1 water specific, 10%

Every company that publishes an environmental/sustainability report mentions some form of stakeholder engagement policy, but only one (Alcan) gives a specific example in the area of water management. Alcan has a company-wide priority to engage stakeholders in local and global discussions related to land and water management. The company also sets a goal to ensure long-term and cost-effective water supply and land access for both Alcan and the communities where it operates.

Engage supply chain: 10 companies, 100%; 0 water specific

Every company that publishes a report mentions some form of supply-chain management policies or programs such as supplier codes of conduct in their report, but none has an example specifically in the area of water management.

Establish a water policy and set corollary goals and targets:

- **Water statement/policy:** 8 companies, 80%

Topics covered in water statements by the companies in this sector include: importance of freshwater resources; commitment to protecting water resources and reducing water consumption; and recognition of competing water demands in the communities where they operate.

We used water in mining, smelting, refining and petroleum processes. Access to clean water is an issue of growing international importance and a key challenge for sustainable development. Our activities are often located in remote arid environments where the demand for fresh water is high... Resource extraction often competes with agriculture and other human activities for access to land and water resources. The mineral resources we seek are often located in developing countries where land is the basis of subsistence agricultural activities for already marginalized communities. They also are often in desert countries where water is critical to the survival of communities. (BHP)

Access to clean water is one of the most critical aspects of sustainable development. It is essential to quality of life and to the survival of ecosystems... Our operations are significant users of water and we are located in environments that range from arid deserts to water abundant. Wherever we operate we expect our operations to use water responsibly and conserve it, recycle it and minimize pollution. (AngloAmerican)

Reducing the use of water in our operations will make more available to meet the other needs of the communities in which we operate and reduce the volume of wastewater to be discharged or managed under ever-increasing regulatory requirements. (Alcoa)

Water and land resources are viewed as a form of public trust and a fundamental component of Alcan's ongoing support and acceptance in the communities where it operates. (Alcan)

Our water requirements, particularly freshwater, compete with the local ecological, social and other economic functions. This is particularly the case in arid and semi-arid climates, where water is a precious resource. There is also potential for our operations to impact on the water quality of receiving surface and groundwater supplies. (Rio Tinto)

Nine companies have an independent water section in their report.

- **Goals and targets:** 6 companies, 60%
 - With numerical/specific targets: 4 companies, 40%
 - Relating to water use (6 companies, 60%), wastewater (3 companies, 30%), both (2 companies, 20%). In addition to quantitative goals for water efficiency, two companies set goals to develop and implement water-management plans.

Implement best available technology: 7 companies, 70%; 5 water specific, 50%

Two companies state their commitment to using the best available technology in their environmental protection programs, but do not give specific examples. Two companies mention efforts to use BAT specifically to improve water performance. Alcan states that it employs best practices, including process efficiencies and water conservation. Corus uses Europe-wide best available techniques for the use of water in cooling system. The other three companies do not state their commitment to use BAT, but give examples on the use of various innovative technologies in freshwater conservation and wastewater treatment.

Factor water risk into relevant business decisions: 3 companies, 30%

In addition to its company-wide water strategy, BHP requires all sites with fresh water consumption greater than 500 mega liters per year to have a water-management plan. Alcan's report states that biodiversity conservation is entrenched as a key element for both water and land use planning and management strategies. Its company-wide management system takes a systematic approach to managing water resources, with a focus on resource efficiency, recycling, and reuse. Rio Tinto developed its water strategy in 2005 to encourage long-term planning on water use, identify risks and opportunities, and promote better performance.

Measure and report performance: 10 companies, 100%

- **Measures of performance reported:**
 - Freshwater consumption: 8 companies, 80%
 - Wastewater quality: 7 companies, 70%
 - Wastewater quantity: 5 companies, 50%
 - Water recycling: 4 companies, 40%
 - Other: BHP reports wastewater discharge volume by destination (i.e., surface, ocean, ground, treatment plant, other). It also reports water intensity (water use in kl/ton of product) for various products (metal products, aluminum, base metals, carbon steel/materials, stainless steel, energy coal, petroleum, diamonds, and specialty products) Two companies report expense/investment for wastewater treatment. Three companies report water use by source.
- **How performance is reported:**
 - Absolute values: 10 companies, 100%
 - Normalized: 5 companies, 50% - Some normalize by ton of product or crude steel, and others by sales
 - Both absolute/normalized: 1 company, 10%
 - Trends over multiple years: 10 companies, 100%

- **Regional/Local reporting:** 6 companies, 60%, all of them provide facility-level data
- **Use of reporting guidelines:** 10 companies, 100% use GRI Guidelines, and 7 of them have GRI reference table in their reports. BHP also uses GRI metal and mining industry supplement. JFE uses Guideline for Environmental Reporting developed by the Japanese Ministry of the Environment.

Form strategic partnerships: 10 companies, 100%; 4 water specific, 40%

Every company publishing an environmental/sustainability report mentions some form of partnership program, and four have examples in the area of water management. Arcelor works with the French Ministry of Ecology and Sustainable Development in water resource protection and participates in standards development with AFNOR, the French industrial standards authority. Anglo American co-sponsored the WWF Freshwater Conference held in South Africa in 2005. The company also participates in projects promoting water access, and is developing a plant that treats and converts wastewater into drinking water for the local community. Alcan has been collaborating with international sustainability organizations such as WBCSD, United Nations Environment Programme, and also is involved in the World Economic Forum Water Initiative. Rio Tinto is working with local government in Australia to develop a strategic framework for water management.

Commit to continuous improvement: 8 companies, 80%; 0 water specific

Eight companies mention their policies or management systems to achieve continuous improvements in their environmental performance, but none has specific examples in the area of water management.

REFINING SECTOR

General Description

This industry is classified as NAICS 324 - petroleum and coal products manufacturing. The sector transforms crude petroleum and coal into usable products. Every company reviewed in this study is engaged in petroleum refining. Some of them have divisions that further process petrochemicals and are classified under petrochemical manufacturing (NAICS 32511).

Summary of Findings

Reports in this sector tend to be comprehensive. They also tend to be longer than average—some are more than 100 pages. This industry focuses particular attention on wastewater, oil spills, and hydrocarbon releases into water. Compared to other sectors, refining sector companies were more likely (33%) to recognize and evaluate water-related risks, either in terms of freshwater availability or potential impacts of wastewater discharges and spills into water bodies. The reports by the refining sector focus on activities within the companies' boundaries – none of the companies reviewed provides examples of stakeholder consultation/engagement or supply-chain programs in the area of water management. The sector has the second lowest percentage of water use reporting (58%). Most of the companies in this sector report their water data using absolute values, and only one has normalized data (per million barrel produced)

15 Companies Reviewed	2005 Sales (U.S. billions)
ExxonMobil	\$328
Shell	\$307
BP	\$249
Chevron	\$185
ConocoPhillips	\$162
Total	\$145
ENI	\$83
ValeroEnergy	\$82
China Pet & Chem (Sinopec)	\$70
Petrobras-Petróleo Brasil	\$58
Statoil Group	\$58
Repsol- YPF	\$48
PetroChina	\$47
Marathon Oil	\$44
SK Corp	\$42

Results of Reports Reviewed

12 of 15 companies reviewed publish a non-financial report

Measure current water use: 8 companies, 67%

Assess water landscape and water risks: 4 companies, 33%

Two of the four companies that mention water risk assessment focus on water quality- and wastewater-related risks. Statoil uses an environmental impact fac-

tor (EIF) to assess environmental risks resulting from the discharge of produced water. ConocoPhillips has environmental risk management systems to analyze and manage the impacts of offshore discharge or waste from drilling and production. By contrast, ExxonMobil conducts a freshwater survey in areas where it operates to identify communities where freshwater is potentially scarce. BP evaluates risks associated with water availability and quality in the local communities where it operates. According to its report, BP particularly pays attention to new projects and sites that are located in areas where: freshwater is scarce or withdrawn at unsustainable levels; BP discharges into sensitive waters; and its treatment facilities will need upgrading to meet future legislation. The company also describes water as a local issue, and it uses tools and programs to assess the significance of water risks locally. BP publishes local data and site reports on protected areas, freshwater use and water quality online. In addition, BP is one of few companies that mentions water risks associated with climate change.

Consult stakeholders: 11 companies, 92%; 0 water specific

Eleven companies surveyed have some form of stakeholder engagement policy and program. Although many companies acknowledge the potential effects of their business on local water availability and quality, none of them has specific examples of stakeholder consultation in the area of water management.

Engage supply chain: 11 companies, 92%; 0 water specific

Every company that publishes a report mentions a supply-chain management policy or program such as supplier codes of conduct in their report, but none has an example specifically in the area of water management.

Establish a water policy and set corollary goals and targets:

- **Water statement/policy: 7 companies, 58%**

The water statements by the refining sector focus on the importance of freshwater resources; companies' commitments to protect water resources and reduce water consumption; how water is used in their business; and why water is important for them.

Fresh water, like oil and gas, is a shared natural resource that we all need to use responsibly. (ExxonMobil)

BP manages large volumes of all types of water. In fact, we handle more water than oil... Water is a critical natural resource for BP and an aspect of the natural environment we want to protect. (BP)

Oil and gas industry water issues include: water produced with oil and gas (volumes, treatment, handling, discharges), fresh water use versus reclaimed or salt water use, protection of surface water and groundwater from contamination by spills or leaks, facility process water treatment and water use

for steam production and cooling. (ConocoPhillips)

Our strategy to improve water conservation consists of reducing use, treating and, where possible, recycling residual wastewater. (Total)

The sustainable management of water requires industry to pay attention to the possible savings in the use and treatment of waste water in order to reduce concentrations of pollutants. (ENI)

Eight companies have an independent water section in their report.⁶

- **Goals and targets: 8 companies, 67%**
 - With numerical/specific targets: 1 company, 8%
Only one company (Total) describes a quantitative target (to reduce chemical and hydrocarbon releases into water less than 30 ppm for all subsidiaries in 2007). No companies report quantitative target for water use.
 - Relating to water use (8 companies, 67%), wastewater (7 companies, 58%), both (7 companies, 58%)

Implement best available technology: 7 companies, 58%; 5 water specific, 42%

Two reports mention commitments to use innovative or best available technology in environmental protection programs, but do not give specific examples of how this technology is applied to water management. Other companies do not mention their commitment to use BAT, but give examples of various technologies used in water management, including cutting-edge wastewater treatment (ENI, Repsol), use of saltwater in water in waterflood operations to conserve freshwater (ConocoPhillips), and development of technologies and products to reduce the production of water in wells and exploitation of water produced as a resource (ENI). Petrobras describes DataHydro, a new computerized data collection and analysis system for water resources and effluent. BP states that it seeks to help make the skills and technology available in order to help address the global water issue.

Factor water risk into relevant business decisions: 2 companies, 17%
ConocoPhillips seeks to address the need for a corporate strategy on water management and investigate how the company can use its technical capabilities for improved water management. BP uses its water risk assessment data to develop water-management plans.

⁶ BP's water section is particularly comprehensive, with nine pages of data and a detailed description of its water policy.

Measure and report performance: 9 companies, 75%

- **Measures of performance reported:**
 - Freshwater consumption: 7 companies, 58%
 - Wastewater quality: 5 companies, 42%
 - Wastewater quantity: 4 companies, 33% - In addition to standard water quality indicators such as BOD, COD, and TSS, companies in this industry also reports hydrocarbons and oil spills.
 - Water recycling: 1 company, 8%
 - Other: Repsol measures the amount of captured water divided by external, discharges, reutilized, produced, injected, and other sources. BP reports wastewater discharge by activity (group discharge, production and manufacturing discharge, drilling discharge). ENI reports total water consumption including sea water, which accounts for 92% of the total water consumption for the company. Three companies report the amount of investment or expenditure related to water management. One company reports water use by source.
- **How performance is reported:**
 - Absolute value: 8 companies, 67%
 - Normalized: 1 company, 8% - SK Corp reports industrial water use normalized by million barrel produced
 - Both absolute/normalized: 1 company, 8%
 - Trends over multiple years: 7 companies, 58%
- **Regional/Local reporting:** 3 companies, 25% - 1 company provides facility-level data.
- **Use of reporting guidelines:** 9 companies, 75%, use GRI Guidelines, and 8 of them have GRI reference table in their reports. Four companies use the International Petroleum Industry Environmental Conservation Association (IPIECA) Oil and Gas Industry Guidance on Voluntary Sustainability Reporting. Three companies have a United Nations Global Compact reference table in addition to the GRI table. Petrobras uses the Production Guide for Corporate Social Responsibility Annual Report and Statement developed by Instituto Ethos, a Brazilian CSR organization.

Form strategic partnerships: 11 companies, 92%; 3 water specific, 25%

BP worked with the IPIECA to help produce the IPIECA Water Management Good Practice Guidelines, which promote an integrated approach to water extraction, water use, and discharges to water. ConocoPhillips is planning to support local water resource projects, and Petrobras gives funding to NGOs working to encourage the sustainable management of water and its responsible use.

The projects include the recuperation of freshwater bodies and forests around them, preservation of biodiversity, dissemination of good practices to avoid wastage of water, and qualification of representatives from the local

government, associations, productive sectors and other social actors involved in the water resource management.

Commit to continuous improvement: 10 companies, 83%; 2 water specific, 17%

Ten companies have policies or management systems to achieve continuous improvement of their environmental performance. Two of them describe their effort in the area of water management. ExxonMobil says it “continually seeks ways to reduce water use and preserve water quality, through the design and operation of our facilities, recycling and reuse and aggressive measures to prevent water pollution.” BP uses its environmental management system to develop water improvement plans.

UTILITIES SECTOR

General Description

Companies in the utilities sector (NAICS 221) provide electric power, natural gas, steam supply, water supply, and sewage removal through a permanent infrastructure of lines, mains, and pipes. Some companies reviewed in this study are energy (mainly electricity) producers or distributors, while others provide multiple utility services including electricity, gas, water, and wastewater.

Summary of Findings

This industry uses water mainly for energy generation processes and cooling. Some use water for hydro-power, and others deliver water services. Considering how essential water resources are for their business, a relatively small percentage of companies assess water-related risks (14%) or mention water policies or management strategies in their reports (36%). However, every company reviewed measures current water use and most report their performance over multiple years using absolute value.

The methods and definitions of reporting water use vary greatly among the companies in this industry. Since water is used for many different purposes, many report their water use by purpose. Some report process water and cooling water separately, some report only office water use, while drinking water service companies report water lost during water delivery process.

Companies in this sector tend to have comprehensive environmental/sustainability reports of nearly 100 pages or more. However, none mentions stakeholder engagement or a supply-chain program in relation to water management.

15 Companies Reviewed	2005 Sales (U.S. billions)
E.ON	\$67
Electricité de France	\$64
RWE Group	\$55
Suez Group	\$55
ENEL	\$47
Tokyo Electric Power	\$47
Veolia Environment	\$33
UES of Russia	\$25
Gaz de France	\$24
Korea Electric Power	\$23
Kansai Electric Power	\$23
Centrica	\$23
Endesa Group	\$21
Chubu Electric Power	\$20
Dominion Resources	\$18

Results of Reports Reviewed

14 of 15 companies reviewed publish a non-financial report

Measure current water use: 14 companies, 100%

Assess water landscape and water risks: 2 companies, 14%

Electricité de France (EDF) developed and uses a software program to evaluate environmental impact of projects on local communities by looking at water, energy, and waste. EDF mentions its goal of: “anticipating water quantity and quality, detecting potential technological breakthroughs in water servicing worldwide.” Suez describes an Environment Foresight Advisory Council that evaluates changing expectations, technologies, and regulations in the water and waste markets in the coming decades.

Consult stakeholders: 14 companies, 100%; 0 water specific

Every report includes stakeholder engagement policies and activities, but none has an example in the area of water management.

Engage supply chain: 14 companies, 100%; 0 water specific

Every report includes supply-chain management policies or programs such as supplier codes of conduct in their report, but none has a specific example in the area of water management.

Establish a water policy and set corollary goals and targets:

- **Water statement/policy:** 5 companies, 36%

The water statements of this sector focus on the importance of freshwater resources and companies’ commitment to reduce water consumption.

Our central focus is to continue to meet the water supply and wastewater needs of our customers, without harming the environment, despite the pressures of population growth and increased climate variability... Using water more efficiently is the most important element in making sure there is enough water for everyone. (RWE)

[Our] water consumption from the natural sources [accounts for] 36% of the total use of water resources in Russia. (UES of Russia)

Water resources are becoming fragile and scarce in many parts of the world, as humans make increasing demands on them. (Veolia)

Six companies provide an independent water section in their report.

- **Goals and targets:** 7 companies, 50%
 - With numerical/specific targets: 3 companies, 21%
 - Relating to water use (7 companies, 50%), wastewater (2 companies, 14%), both (2 companies, 14%). Two companies set quantitative tar-

gets to reduce absolute water consumption. One water utility company sets a goal to maintain its water network efficiency above 80% in the EU.

Implement best available technology: 9 companies, 64%; 3 water specific, 21%

Six companies state their commitment to use best available technology to improve their environmental performance but do not give specific examples or mention water management. Two companies do not formally state their commitment to use BAT but give examples of cutting-edge technologies used in wastewater treatment. RWE mentions its goal to detect potential technological breakthroughs in water servicing worldwide, such as pumping and desalination technologies.

Factor water risk into relevant business decisions: 1 company, 7%

Only one company (RWE) describes how it incorporates water risk into business decisions:

Consideration of nature conservation and landscape protection is incorporated in our decision-making processes and all our activities, especially those which have a particularly strong impact on the environment such as.... water abstraction and wastewater discharge.

Electricité de France describes projects to reduce its customers' water consumption, such as distributing 100,000 devices to save water used for toilet flushing and providing education programs on how households can save water.

Measure and report performance: 13 companies, 93%

- **Measures of performance reported:**
 - Freshwater consumption: 11 companies, 79%
 - Wastewater quality: 3 companies, 21%
 - Wastewater quantity: 3 companies, 21%
 - Water recycling: 1 company, 7%
 - Other: Three companies that provide drinking water services report water loss, either as a percentage of water they supplied or the absolute amount of water lost through the distribution process. Four companies report the amount of investment or expense for water conservation or wastewater treatment. One company reports water use by source.
- **How performance is reported:**
 - Absolute value: 11 companies, 79%
 - Normalized: 2 companies, 14%. One company reports office water use per gWh electricity produced. Another company reports total water consumption per kWh electricity produced.

- Both absolute/normalized: 1 company, 7%
- Trends over multiple years: 11 companies, 79%
- **Regional/Local reporting:** 4 companies, 29%; 2 provides facility-level data
- **Use of reporting guidelines:** 12 companies, 86%, use GRI Guidelines and 11 of them have GRI reference table in their reports. Veolia also includes a United Nations Global Compact reference table. Chubu Electric uses the Guideline for Environmental Reporting developed by the Japanese Ministry of the Environment along with GRI.

Form strategic partnerships: 14 companies, 100%; 3 water specific, 21%

All but one company reviewed mention some form of partnership program in their reports and three have water management programs. Examples include participation in multi-stakeholder network working to provide sustainable water in poor urban areas (RWE); sponsorship of a water- and sustainable development-themed event (Endesa); funding programs to rehabilitate local communities' water well and pumping system (Endesa); and establishment of a non-profit organization to protect water and forest (Chubu Electric).

Commit to continuous improvement: 12 companies, 86%; 1 water specific, 7%.

Twelve companies have policies or management systems to achieve continuous improvement. Only one mentions its commitment to continuously improving water use performance.

APPENDIX B: LIST OF NON-FINANCIAL REPORTS REVIEWED

The websites were accessed between September and October of 2006. The companies are listed by sector, in order of size by 2005 sales.

Industry	Company	URL
Apparel	Walmart	No publicly available non-financial report during the study period
Apparel	Costco	No publicly available non-financial report during the study period
Apparel	Target	http://sites.target.com/images/corporate/about/pdfs/corp_responsibility_report_0406.pdf
Apparel	Walgreens	No publicly available non-financial report during the study period
Apparel	AEON	http://www.aeon.info/environment/report/english/e_2006pdf/e_all.pdf
Apparel	Sears	No publicly available non-financial report during the study period
Apparel	Federated	http://www.fds.com/ir/vote/2006_fact_book.pdf
Apparel	GAP	http://www.gapinc.com/public/documents/CSR_Report_04.pdf
Apparel	TJX	No publicly available non-financial report during the study period
Apparel	Nike	http://www.nike.com/nikebiz/gc/r/fy04/docs/FY04_Nike_CR_report_full.pdf
Apparel	Limited Brands	No publicly available non-financial report during the study period
Apparel	Adidas Group	http://www.adidas-group.com/en/sustainability/_downloads/social_and_environmental_reports/connected_by_football_social_and_environmental_report_2005.pdf
Apparel	VF Corporation	No publicly available non-financial report during the study period
Apparel	Levi Strauss	No publicly available non-financial report during the study period
Automobile	GM	http://www.gm.com/company/gmability/sustainability/reports/05/images/pdf/2004-05full.pdf
Automobile	Ford	http://www.ford.com/en/company/about/sustainability/2005-06/envReviewWater.htm
Automobile	DaimlerChrysler	http://www.daimlerchrysler.com/Projects/c2c/channel/documents/699381_sustainability_profile2005_e.pdf
Automobile	Toyota	http://www.toyota.co.jp/en/environmental_rep/06/download/pdf/e_report06.pdf
Automobile	Volkswagen	http://www.volkswagen-sustainability.com/nhk/nhk_folder/en/zum_bericht.Par.0002.Download.pdf#search=%22volkswagen%20moving%20generations%22
Automobile	Honda	http://world.honda.com/environment/2005report/pdf/2005E_report_full.pdf
Automobile	Nissan	http://www.nissan-global.com/EN/DOCUMENT/PDF/SR/2006/SR2006_E_all.pdf
Automobile	Peugeot	http://www.sustainability.psa-peugeot-citroen.com/ressources/pdf/en/Indicateurs_Environnement_2005.pdf
Automobile	Fiat	http://www.fiatgroup.com/comuni/php/file_get.php?w=NG5ULL6GSGVVSZFPYDAOI
Automobile	BMW	http://www.bmwgroup.com/bmwgroup_prod/e/0_0_www_bmwgroup_com/verantwortung/publikationen/sustainable_vt_2005/_pdf/BMW_SVR.pdf
Automobile	Renault	http://www.renault.com/renault_com/en/images/Renault%20Annual%20Report%202005%20%20EN%20290306%2020-353236.pdf

Industry	Company	URL
Automobile	Hyundai	http://worldwide.hyundai-motor.com/dataPDF/sustainability/Sustainability(ENG)_4.PDF
Automobile	Volvo	http://www.volvocars.com/NR/rdonlyres/57179AF0-A3C3-4FD5-AE74-AD149B8FA375/0/Corporate_Citizenship_report_2006.pdf
Automobile	Mazda	http://www.mazda.com/csr/download/pdf/2005/e2005all.pdf
Automobile	Suzuki	http://www.globalsuzuki.com/corp_info/index.htm - report and reference info. Data.
Beverage	Pepsico	http://www.pepsico.com/PEP_Investors/AnnualReports/05/Pepsi2005Annual.pdf
Beverage	TCCC	http://www2.coca-cola.com/citizenship/environmental_report2005.pdf http://www2.coca-cola.com/ourcompany/pdf/corporate_responsibility_review.pdf
Beverage	Anheuser Busch	http://www.abehsreport.com/docs/ABI-EHS_site_2005.pdf
Beverage	Heineken	http://www.heinekeninternational.com/content/live/files/downloads/InvestorRelations/Heineken%20N.V.%202004-2005%20Sustainability%20Report.pdf
Beverage	Diageo	http://www.diageo.com/NR/rdonlyres/C2B1FCB3-F500-4F89-BF40-4BA2BD55FB66/0/CCR2005.pdf Country based r
Beverage	InBev	http://www.inbev.com/citizenship/pdf/InBev_GCRReport_06.pdf
Beverage	Cadbury Schweppes	http://www.cadburyschweppes.com/NR/rdonlyres/F87C0F74-F8CD-4828-A332-DA81DBBE4641/0/CadburySchweppes2006_CSR_Report.pdf
Beverage	Kirin	http://www.kirin.co.jp/english/company/csr/pdf/report2006/csr_report2006e.pdf
Beverage	SABMiller	http://www.sabmiller.com/NR/rdonlyres/2436BE0A-972B-43E4-8BDB-A43B8E848325/0/SABMiller_SDR_2006.pdf
Beverage	FEMSA	http://www.femsa.com/en/assets/002/9031.pdf
Biotech/Pharma	Pfizer	http://www.pfizer.com/pfizer/subsites/corporate_citizenship/report/cc_report_2005.pdf
Biotech/Pharma	Johnson & Johnson	http://www.jnj.com/community/environment/publications/2005_environ.pdf
Biotech/Pharma	Bayer	http://www.sd.bayer.com/downloads/6608/6614/6861/Englisch_komplett.pdf
Biotech/Pharma	GlaxoSmithKline	http://www.gsk.com/reportsandpublications.htm
Biotech/Pharma	Sanofi-Aventis	http://en.sanofi-aventis.com/index.asp
Biotech/Pharma	Novartis	http://www.novartis.com/downloads/corporate_citizenship/Novartis_GRI_Report_2005.pdf
Biotech/Pharma	Roche Group	http://www.roche.com/gb05e.pdf
Biotech/Pharma	AstraZeneca	http://www.astrazeneca.com/sites/7/imagebank/typeArticleparam511672/astrazeneca-2005-cr-summary-report.pdf
Biotech/Pharma	Abbott	http://www.abbott.com/en_US/content/microsite/citizenship_report/2005/2005gcr.pdf
Biotech/Pharma	Merck	http://www.merck.com/cr/docs/Merck_Corporate_Responsibility_Report_2005.pdf
Biotech/Pharma	Wyeth	http://www.corporateregister.com/data/showp.pl?num=14799
Biotech/Pharma	Bristol-Myers Squibb	http://www.bms.com/pdf/sustain_0405.pdf
Biotech/Pharma	Akzo Nobel Group	http://www.shareholder.com/Shared/DynamicDoc/akzo/1137/CSR2005LORES.pdf
Chemical	P & G	http://www.pg.com/content/pdf/01_about_pg/corporate_citizenship/sustainability/reports/sustainability_report_2005.p
Chemical	BASF	http://www.berichte.basf.de/en/2005/unternehmensbericht/?id=bhJ5r9Evrbc-p-2S
Chemical	Dow	http://www.dow.com/PublishedLiterature/dh_0587/09002f13805870b1.pdf?filepath=commitments/pdfs/noreg/771-00161.pdf&fromPage=GetDoc
Chemical	Dupont	http://www.corporateregister.com/data/showp.pl?num=13213

Industry	Company	URL
Chemical	Mitsubishi	http://www.m-kagaku.co.jp/english/aboutmcc/RC/pdf/rc_2005e.pdf
Chemical	Lyondell Chemical	http://www.lyondell.com/html/social/download/lyo_2001_social_resp.pdf
Chemical	Saudi Basic Inds	No publicly available non-financial report during the study period
Chemical	Degussa	http://downloads.degussa.com/downloads/en/additional_reports.Par.0002.downloads.0005.myFile.tmp/Degussa_Corzenship_Report_2005_en.pdf
Chemical	Huntsman	http://www.huntsman.com/corporate/Media/Huntsman_2004_EHS.pdf
Chemical	Asahi Kasei	http://www.asahi-kasei.co.jp/asahi/en/csr/rc/pdf/rc_report2005e.pdf
Food	Nestlé	http://www.nestle.com/NR/rdonlyres/1A5A6ADC-5E60-4CB0-AAD1-483163C10C8C/0/2003_WaterBrochure_English http://www.nestle.com/NR/rdonlyres/C0E9DF8A-B7C0-4E72-B4C1-8D6ECE0CED7B/0/Nestle_commitments_on_wa
Food	Unilever	http://www.unilever.com/Images/Environmental_and_social_report_bkmks_tcm13-39279.pdf
Food	Archer Daniels Midland	No publicly available non-financial report during the study period
Food	Kraft	http://kraft.com/responsibility/pdfs/2005_CR_Summary.pdf
Food	Tyson Foods	http://www.tyson.com/Corporate/PressRoom/docs/SR2005.pdf
Food	Bunge	No publicly available non-financial report during the study period
Food	McDonalds	http://www.mcdonalds.com/corp/values/report/printable.RowPar.0001.ContentPar.0001.ColumnPar.0002.File1.tmp/lcDcsr.pdf
Food	Sara Lee	No publicly available non-financial report during the study period
Food	DANONE	http://www.danone.com/cmocache/MYSESSION~FFD5B35F15CEC01EC12571AA0038EAE6/2DANRRS005_GB_cc.pdf
Food	ConAgra	http://www.conagrafoods.com/documents/2006CRR.pdf
Forest Product	International Paper	http://www.internationalpaper.com/PDF/PDFs_for_Our_Company/Sustainability%20Reports/IPsustainability2006.pdf
Forest Product	Weyerhaeuser	http://www.weyerhaeuser.com/environment/sustainability/webreport/pdf/2005_SustainabilityReport.pdf
Forest Product	Georgia-Pacific	http://www.gp.com/csrr/
Forest Product	Kimberly-Clark	http://www.kimberly-clark.com/aboutus/Sustainability2005/2005SustainabilityReport.pdf#page=1
Forest Product	Stora Enso	http://www.storaenso.com/CDAvgn/showDocument/0,,3877,00.pdf
Forest Product	SCA-Svenska Cellulose	http://www.sca.com/Pdf/env-report05gb.pdf
Forest Product	Oji Paper	http://www.ojipaper.co.jp/english/sustainability/e_report/pdf/2005/report_all.pdf
Forest Product	UPM-Kymmene	http://w3.upm-kymmene.com/upm/internet/cms/upmcms.nsf/\$all/27C8754A4B3B307AC1256F860053C9BA?OpenDocument&qm=menu,8,8,0&smtitle=Publications
Forest Product	Nippon Paper	http://www.np-g.com/e/csr/report/environment_societ/pdf/2005_all.pdf
Forest Product	Smurfit Stone	http://www.smurfit-stone.net/files/environmental.pdf
Hightech/Electronic	IBM	http://www.ibm.com/ibm/responsibility/pdfs/IBM_CorpResp_2004-05.pdf
Hightech/Electronic	HP	http://www.hp.com/hpinfo/globalcitizenship/gcreport/pdf/hp2006gcreport_lowres.pdf
Hightech/Electronic	Panasonic	http://panasonic.net/report/2006/pdf/sr2006e_all.pdf
Hightech/Electronic	Samsung	http://www.samsung.com/AboutSAMSUNG/ELECTRONICSGLOBAL/SocialCommitment/Greport/downloads/greport
Hightech/Electronic	Sony	http://www.sony.net/SonyInfo/Environment/environment/communication/report/2006/qfhh7c0000a2fg8-att/CSR2006

Industry	Company	URL
Hightech/Electronic	Dell	http://www.dell.com/downloads/global/corporate/environ/2006_sustainability_report.pdf
Hightech/Electronic	Toshiba	http://www.toshiba.co.jp/csr/en/report/pdf/report06_all.pdf
Hightech/Electronic	NEC	http://www.nec.co.jp/csr/en/report/pdf/CSR-all.pdf
Hightech/Electronic	LG	http://www.lge.com/about/environment/images/2005_Environmental_Report.pdf
Hightech/Electronic	Fujitsu	http://www.fujitsu.com/downloads/ECO/rep2005/2005report-e.pdf
Hightech/Electronic	Nokia	http://www.nokia.com/NOKIA_COM_1/Corporate_Responsibility/CR_Report_2005/pdfs/nokia_cr_report_2005.pdf
Hightech/Electronic	Intel	http://www.intel.com/intel/finance/gcr05/index.htm http://www.corporateregister.com/data/showp.pl?num=15736
Hightech/Electronic	Motorola	http://www.motorola.com/mot/doc/6/6219_MotDoc.pdf
Hightech/Electronic	Canon	http://www.canon.com/environment/report/report2006e.pdf
Hightech/Electronic	Cisco	http://www.cisco.com/web/about/ac227/ac111/pdf/ccmigration_09186a0080536144.pdf
Metal/Mining	ThyssenKrupp	No publicly available non-financial report during the study period
Metal/Mining	Arcelor	http://www.arcelor.com/rls/data/pages/402/DDRARcelorGB.pdf
Metal/Mining	Nippon Steel	http://www0.nsc.co.jp/shinnihon_english/kankyoku/index.html
Metal/Mining	BHP Billiton	http://sustainability.bhpbilliton.com/2005/docs/BHPBillitonSustainabilityReport2005.pdf
Metal/Mining	AngloAmerican	http://www.angloamerican.co.uk/static/uploads/Anglo%20American%202005.pdf
Metal/Mining	Mittal Steel	No publicly available non-financial report during the study period
Metal/Mining	Alcoa	http://www.alcoa.com/global/en/about_alcoa/sustainability/pdfs/Highlights_report.pdf
Metal/Mining	JFE Holdings	http://www.jfe-holdings.co.jp/en/environment/environment2005e.pdf
Metal/Mining	POSCO	http://www.posco.co.kr/homepage/docs/en/culture/dn/2005_POSCO_SR_EN.pdf
Metal/Mining	Alcan	http://www.publications.alcan.com/sustainability/2006/en/pdf/alcan_sr06_print_full.pdf
Metal/Mining	Rio Tinto	http://www.riotinto.com/library/reports/PDFs/2005_susDevReview.pdf
Metal/Mining	Corus Group	http://www.corusgroup.com/file_source/StaticFiles/Functions/HSE/CorusCRR05.pdf
Refining	ExxonMobil	http://www.exxonmobil.com/Corporate/Files/Corporate/ccr05_fullreport.pdf
Refining	BP	http://www.bp.com/liveassets/bp_internet/globalbp/STAGING/global_assets/downloads/S/bp_sustainability_report_2_
Refining	Chevron	http://www.chevron.com/cr_report/2005/documents/2005_Chevron_CRR.pdf
Refining	Shell	http://www.shell.com/static/envandsoc-en/downloads/about_this_site/shell_sustainability_report_2005.pdf
Refining	ConocoPhillips	http://sd.conocophillips.com/NR/rdonlyres/95BF545D-0382-4887-A6C1-7A846F982E5A/0/4000329_Sustainable_050905_sm.pdf
Refining	Total	http://www.total.com/static/en/medias/topic1606/Total_2005_CSR_en.pdf.pdf
Refining	ENI	http://www.eni.it/external/eniit/eni/servlet/view/eni/upload/documentazione/area_governance_e_responsabilita_d_imp_esp_impresa_generali/_2R6h_0_xoidcmWopk/Corporate%20Responsibility.pdf?lang=en&sessionId=13288919
Refining	Valero Energy	No publicly available non-financial report during the study period
Refining	China Pet & Chem (Sinopec)	No publicly available non-financial report during the study period
Refining	Petrobras-Petróleo Brasil	http://www2.petrobras.com.br/ResponsabilidadeSocial/ingles/pdf/BS_completo.pdf
Refining	Statoil Group	http://www.statoil.com/INF/SVG03595.NSF/Attachments/Barekraft_2005_eng.pdf/\$FILE/Barekraft_2005_eng.pdf
Refining	Repsol-YPF	http://www.repsolypf.com/comunes/archivos/Responsabilidad_CorporativaV2_2005_eng__171184.pdf
Refining	PetroChina	http://www.petrochina.com.cn/english/jkaqhj/pdf2005/jkaq2005.pdf or http://www.corporateregister.com/data/showp.pl?num=16298

Industry	Company	URL
Refining	Marathon Oil	No publicly available non-financial report during the study period
Refining	SK Corp	http://eng.skcorp.com/
Utility	E.ON	http://www.eon.com/en/downloads/EON_CSR_2005_e.pdf
Utility	Electricité de France	http://www.edf.fr/html/ra_2005/uk/pdf/ra2005_dd_full_va.pdf
Utility	RWE Group	http://www.rwe.com/generator.aspx/konzern/verantwortung/dialog/berichte-und-broschueren/property=Data/id=33324/verantwortung-engl-2005.pdf
Utility	Suez Group	http://www.suez.com/documents/english/rapportactivites2005/SUEZ_RADD2005_entire_en.pdf
Utility	ENEL	http://www.enel.it/azienda_en/sostenibilita/bilanci_sostenibilita/doc/sustainability_2005.pdf
Utility	Tokyo Electric Power	http://www.tepco.co.jp/en/env-com/environment/report/2006/pdf/06report-e.pdf
Utility	Veolia Environment	http://www.corporateregister.com/data/showp.pl?num=15520
Utility	UES of Russia	http://www.rao-ees.ru/en/info/respons/cor_sust_2005.pdf
Utility	Gaz de France	http://www.gazdefrance.com/EN/public/page.php?idespace=18
Utility	Korea Electric Power	http://www.kepco.co.kr/eng/
Utility	Kansai Electric Power	http://www.kepco.co.jp/english/action/pdf2005/e2005.pdf
Utility	Centrica	http://www.centrica.co.uk/files/pdf/CNA_CSR.pdf
Utility	Endesa Group	http://www.endesa.es/NR/rdonlyres/eohme466s6c3ebsxtnhv7jz7zylos7boyufsbfbjub7vtdje4cezp4z72uhglfhhiz64m7np6jjiampwmh/sustainability2005report.pdf
Utility	Chubu Electric Power	http://www.chuden.co.jp/english/corporate/pdf/kankyonenpo2005.pdf
Utility	Dominion Resources	No publicly available non-financial report during the study period



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