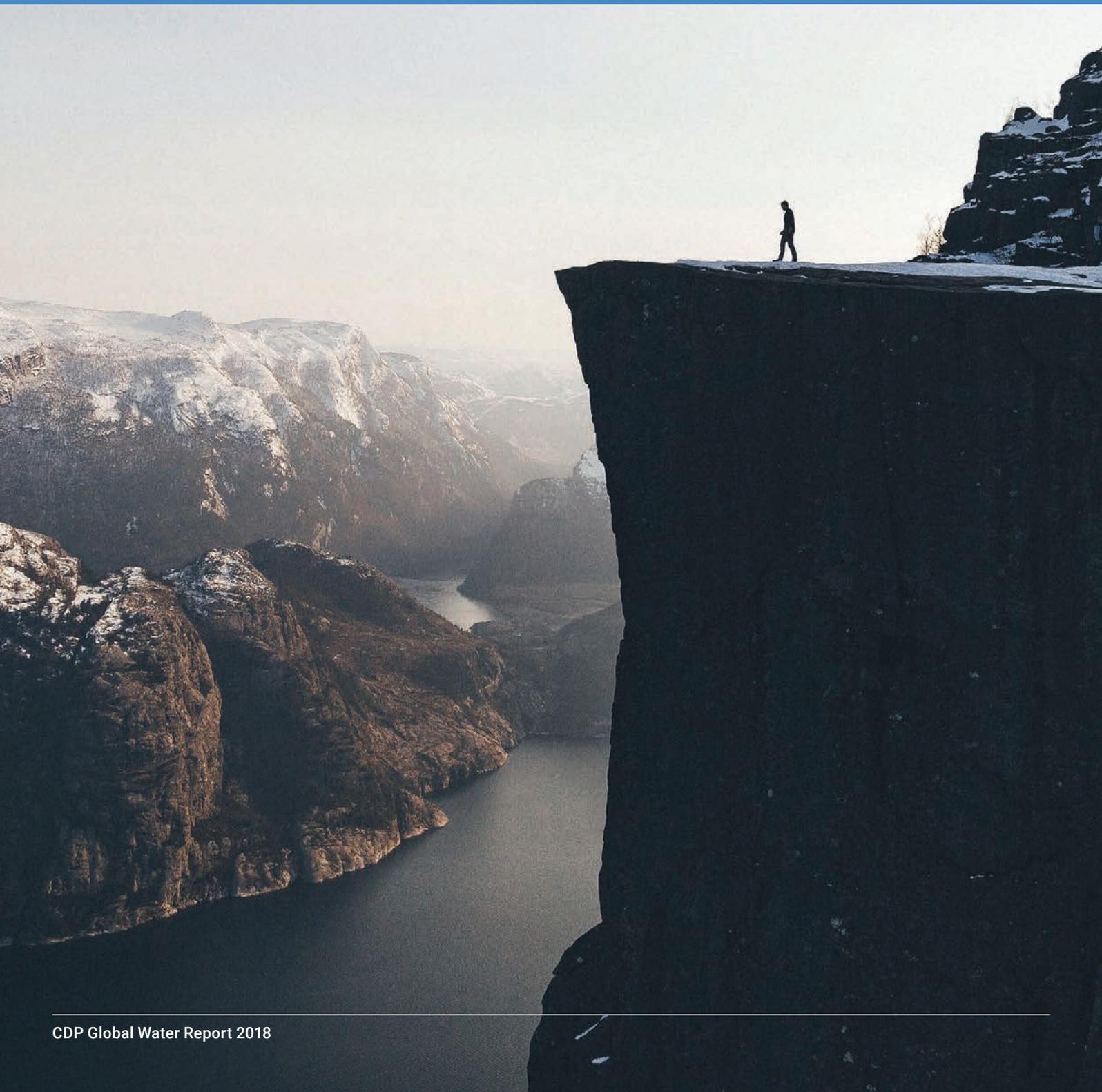


TREADING WATER

Corporate Responses to Rising Water Challenges

Written on behalf of 650 investors with US\$87 trillion in assets





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To read 2018 company responses in full, please go to <https://www.cdp.net/en/responses>

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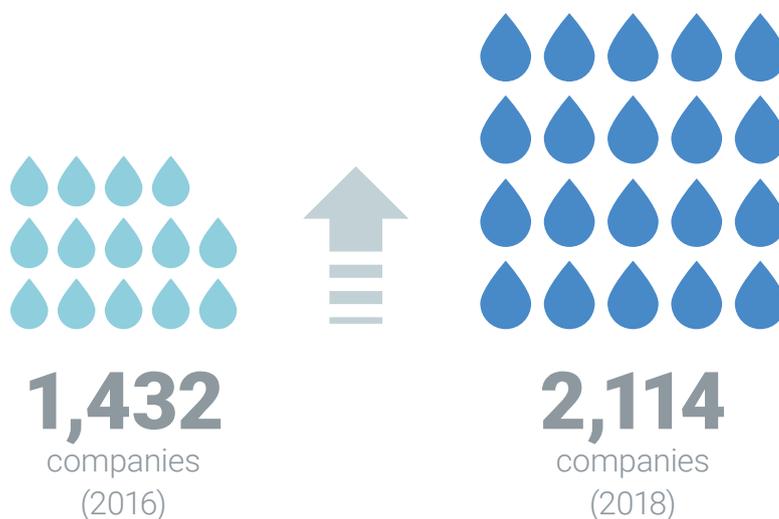
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ABOUT THIS REPORT

In 2018, 4,969 high impact companies were asked to provide data about their efforts to manage and govern freshwater resources through CDP. In total 2,114 companies responded, up from 1,432 in 2016.

This data is used by 650 institutional investors, representing US\$87 trillion in assets to engage with portfolio companies, inform investment decisions and catalyze change. In addition, 44 purchasing organizations, with a combined spend of US\$2 trillion, use CDP water security data to drive greater insight, accountability and action throughout their global supply chains.

This report presents analysis of the response data from a sample of 783 of the world's largest publicly listed companies. The report is aimed at companies and investors seeking to understand how they can play their part in delivering a water secure world.



KEY FINDINGS

Corporate action is insufficient to achieve SDG 6 and deliver a water secure future

- Companies are withdrawing more water year-on-year, despite greater awareness of water risks and more targets to reduce withdrawals being set. Between 2015 and 2018, there has been an almost 50% increase in the number of companies reporting higher water withdrawals. The increase in withdrawals is most pronounced in Asia and Latin America, and in the Food, Beverage & Agriculture, Manufacturing and Mineral Extraction sectors.

Companies must ensure that water is meaningfully embedded into corporate governance

- The strategic decisions taken by the CEO and the Board can truly transform a company's impact on water resources. But although companies report high levels of risk exposure and board-level oversight, they have not yet tied water issues to performance. We found that among a cohort of companies in high impact sectors, 77% report exposure to substantive water risks, and 93% report that they have board-level oversight of water issues, but less than a third (31%) have incentives in place for C-Suite executives on water-related issues.

The Retail sector is lagging behind

- The Retail sector has moved ahead of the Fossil Fuels sector for the first time in terms of poor performance on both transparency and action. Just 24% of retail companies responded to their investors, and fewer than 25% have water-related targets or goals.

CEO FOREWORD

PAUL SIMPSON, CEO, CDP



We all face a choice: seize the opportunities of the transition to a stable climate and a water secure future, or continue business as usual and face untold risks.

Water is the life blood of our global economy. It is a fundamental necessity for lives and livelihoods; for economic prosperity, health and development, and environmental sustainability. Yet this vital resource remains undervalued.

Last year, the UN reported that the world is not on track to meet its goal of ensuring the availability and sustainable management of water and sanitation for all - Sustainable Development Goal 6 (SDG 6). In fact, water crises continue to be rated as a top global risk based on both severity and likelihood by the World Economic Forum's Global Risks Report.

Meanwhile, a warming world continues to put our water supplies at risk. The landmark report from the Intergovernmental Panel on Climate Change (IPCC) showed us that limiting warming to below 1.5C would see the global population's exposure to water stress lowered by 50% compared to a 2C scenario. Yet, the world is currently heading beyond this guardrail.

We all face a choice: seize the opportunities of the transition to a stable climate and a water secure future, or continue business as usual and face untold risks.

At CDP, we have been encouraged to see the increase in investors and companies stepping up their engagement with water security over the years. Ten years ago, when our water security program was launched, water disclosure was non-existent in capital markets. Last year, 2,114 companies, worth more than US\$18 trillion in market capitalization disclosed water information to their investors and customers through our platform.

However, corporate action is not reaching the pace and scale needed to truly address water insecurity. Our analysis shows that even as companies report greater risks year on year, freshwater withdrawals are increasing as they expand their production.

Achieving SDG 6 will require a complete transformation of our global economy. It will mean unprecedented co-operative action from companies, investors, cities, states and governments across all sectors.

We are seeing some progress, from the companies participating in early efforts to set contextual water targets; to those seizing opportunities for new water-smart products. For example, German chemicals company **Symrise AG** now ties 10% of its C-suite bonuses to achieving corporate sustainability targets, including strategic water-related targets. And UK consumer goods company, **Reckitt Benckiser**, has committed to deriving a third of its net revenue from 'more sustainable' products by 2020. An innovation that results in a product reducing its water impact by more than 10% per use is classified as a 'sustainable product'.

And last year, a new index from **Euronext** with **Goldman Sachs**, in partnership with CDP became the first globally to base its selection on how companies perform on water security, climate change, and deforestation.

These are important and timely reminders of the progress we are seeing across the real economy. But there are still serious hurdles in the race to achieve SDG 6 on water and sanitation. In October 2018, Brazil elected a president whose policies threaten the future of the Amazon rainforest, a vital source and filter of water for Brazil. In the US, the Environmental Protection Agency has proposed rollbacks to the Clean Water Act at a time when US states are being urged to issue more bonds and loan guarantees to help finance water infrastructure¹.

There is no time for complacency. Now is the time for businesses to ramp up action and send a clear signal to governments that they need policy ambition to match. Business as usual is no longer an option, but a prosperous and sustainable water secure future is achievable, if we choose to rise to the challenge. We must, we can and I believe we will.

Paul Simpson
CEO, CDP

NORGES BANK INVESTMENT MANAGEMENT COMMENTARY



As a shareholder, we expect the boards of companies we invest in to ensure that material water challenges and opportunities are integrated in corporate strategy and investment planning, risk management and reporting.

Norges Bank Investment Management is responsible for managing the assets of the Norwegian Government Pension Fund Global, currently amounting to more than US\$1 trillion. We work to safeguard and build financial wealth for future generations.

Our objective is to secure the highest possible return with moderate risk. Responsible investment is a key priority for the fund as it supports the long-term economic performance of our investments, and reduces financial risks associated with the environmental and social practices of companies in our portfolio.

Water management has been a focus area for us since 2009. Water challenges may give rise to risks and opportunities for companies, and their responses to these may influence long-term returns for the fund as a shareholder. Externalities from unsustainable water use may also present a risk to our portfolio's long-term value. We have a general interest in sustainable water management and efficient water regulation across different sectors and geographies.

To assess whether companies are adequately managing relevant risks we rely on corporate reporting. Every year we assess companies' disclosures across indicators of governance, strategy, risk management, supply chains and metrics and targets. We see the quality and scope of disclosures as an indicator of companies' maturity in water management. Our assessments inform our company engagements, voting and risk management. The information is also provided to support investment decisions. In 2018, our assessments on water management covered 598 companies in the chemical, consumer goods, farming and fishing, food and beverage, mining, oil and gas, pulp and paper and power sectors. The results show a general improvement in reporting on water management compared to 2017. On average, companies assessed in both 2017 and 2018 improved their scores by 8 percentage points, and around 30 percent of companies with no reporting on water management in 2017 began to report on this topic in 2018 – some following direct interactions with us.

We recognize CDP's important role in driving increased and improved disclosures, and we base many of our assessments on the responses through CDP's platform. We appreciate that disclosure frameworks rarely fit completely for everyone and can often be time consuming to fill out. We nevertheless encourage companies to continue reporting through CDP to ensure consistency, comparability and a common repository of water data.

Disclosures reflecting board accountability and oversight are something we emphasise. As a shareholder, we expect the boards of companies we invest in to ensure that material water challenges and opportunities are integrated in corporate strategy and investment planning, risk management and reporting. Boards should ascertain that the ensuing responsibilities are clearly defined within the organisation and they should effectively guide, monitor and review company management in carrying out these efforts.

Our assessments in 2018 showed a marked increase in the number of companies where either the board or a board committee directly oversees water management at the company. However, 34% of companies assessed still do not report having board oversight of environmental or water issues. We hope to see even more boards ensure appropriate oversight of this important issue going forward.

We would like to congratulate CDP on the release of the 2018 Global Water Report and are encouraged by the high number of companies continuing to respond to the revised questionnaire.

Carine Smith Ihenacho
Chief Corporate Governance Officer
Norges Bank Investment Management

CDP'S WATER SECURITY PROGRAM 2018

Today, our work drives action on water security at scale

2,114
companies

representing over US\$18 trillion in market capitalization and 53% of heavily water dependent companies on the MSCI ACWI publicly disclose their progress in managing water-related risks and impacts through CDP. This represents a twelve-fold increase on the 175 companies that disclosed in 2010.

650
investors

with combined assets of US\$87 trillion, drive companies to both disclose their impacts on water security and take action to reduce them. This is up from 137 investors in 2010.

36.4
million

people are employed by the publicly-listed companies disclosing through CDP's water security program; equivalent to the population of Canada.

628
cities

with a combined population of 1.7 billion people now disclose to CDP to build resilience and protect their citizens from water risks².

US\$2
trillion

44 purchasing organizations with a combined annual spend of US\$2 trillion motivate their suppliers to disclose water information through CDP, enabling the management of water impacts through global supply chains.

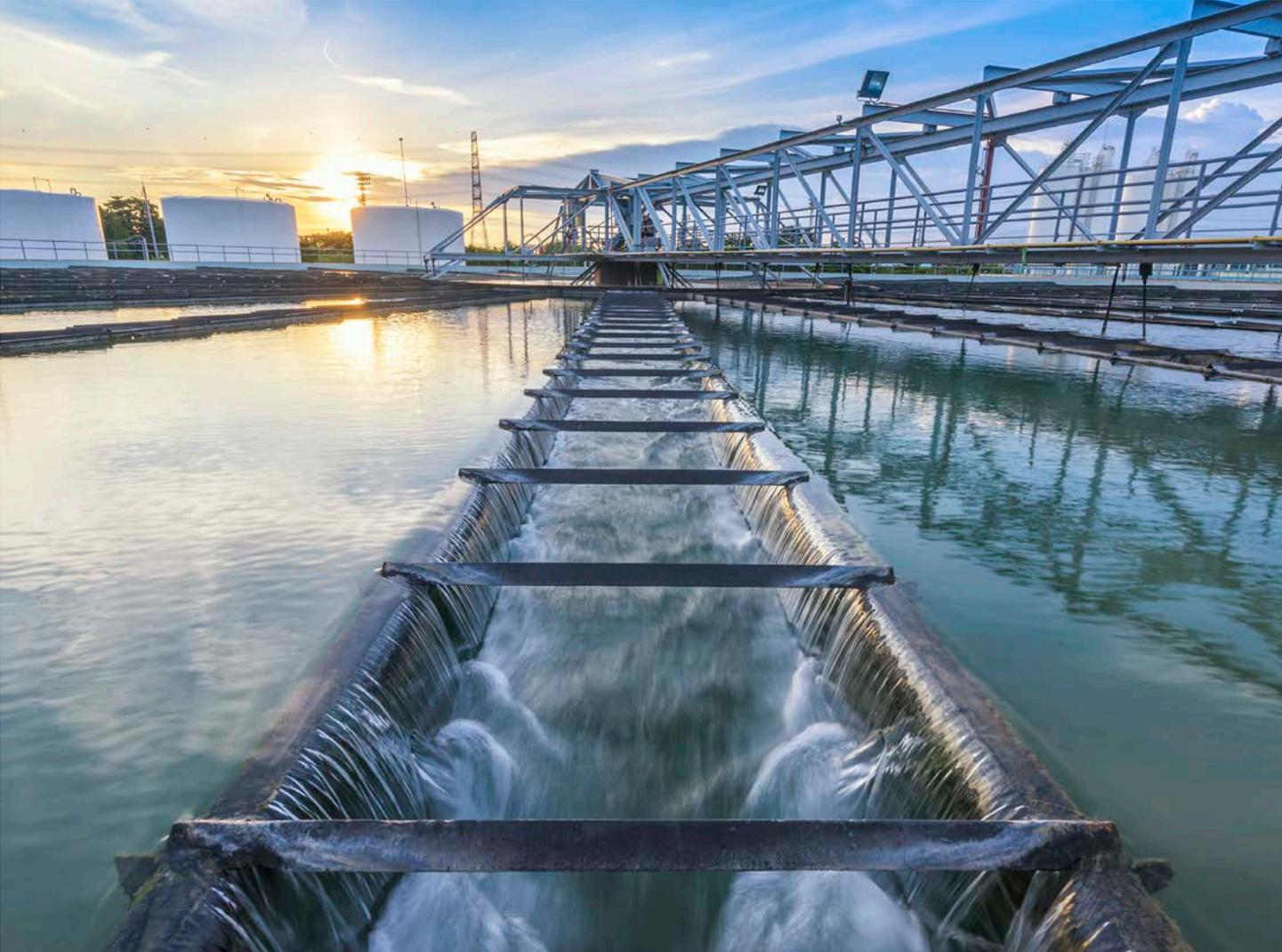
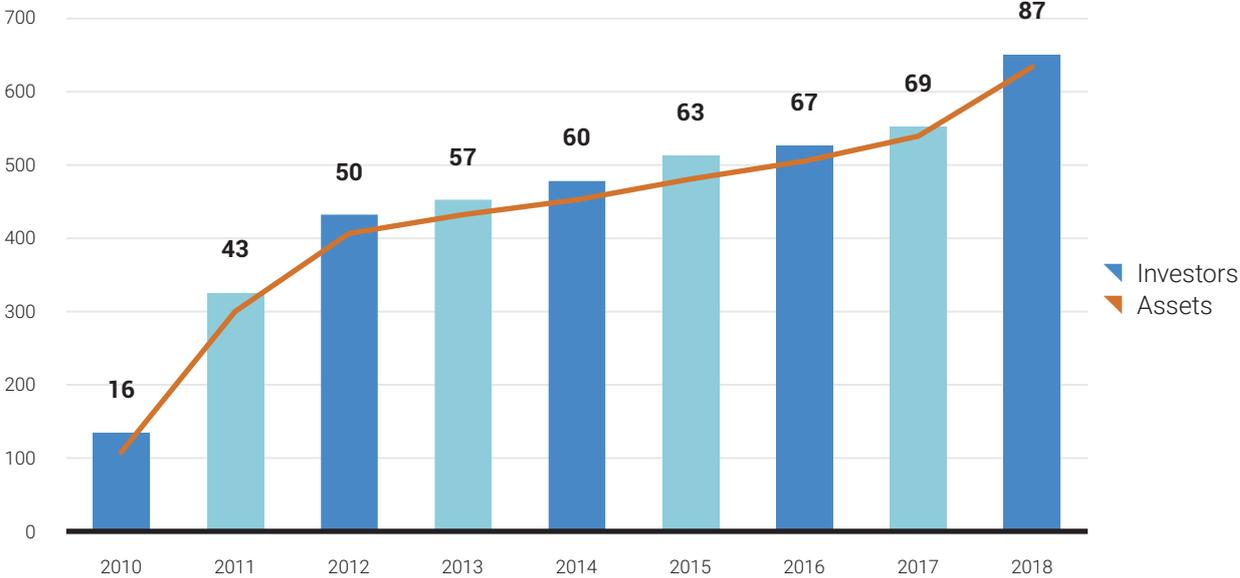
110
countries

CDP is motivating companies to take ambitious action on water security in 110 countries, from Afghanistan to Zimbabwe and from Argentina to Zambia.

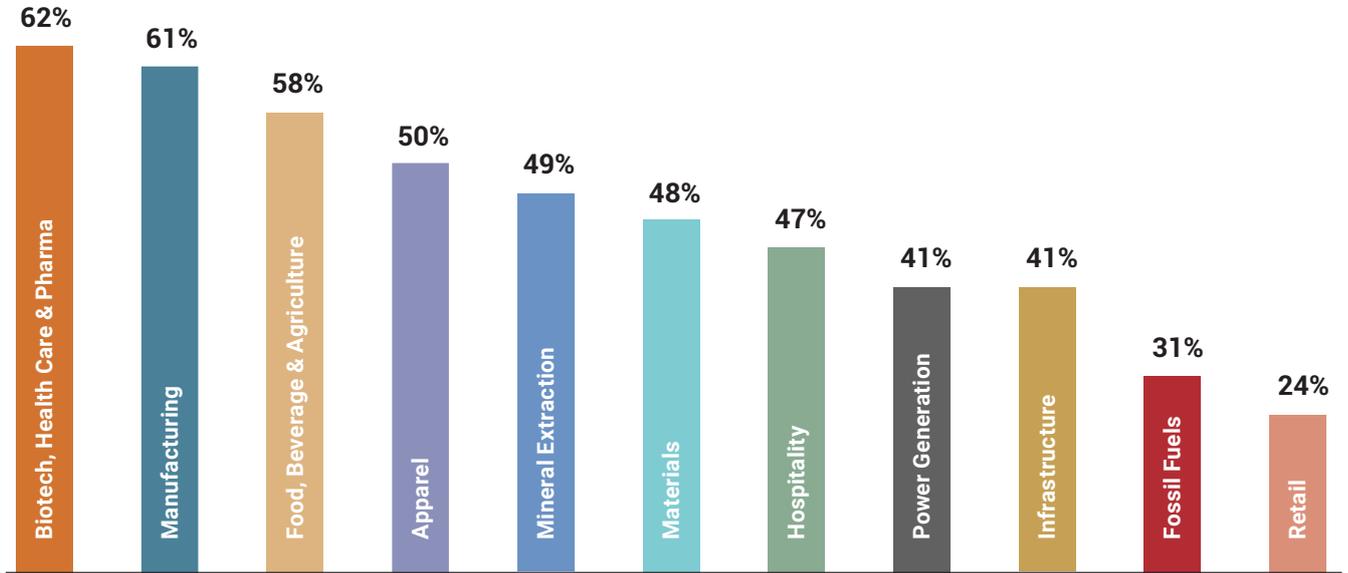
2. Last year, CDP reported that 360 cities reported water-related information via CDP. This reflected the number of cities responding to the water section of the cities questionnaire. Here, we display the total number of cities disclosing to CDP year on year.

CDP'S WATER SECURITY PROGRAM 2018

CDP Investor signatories and assets in US\$ trillion



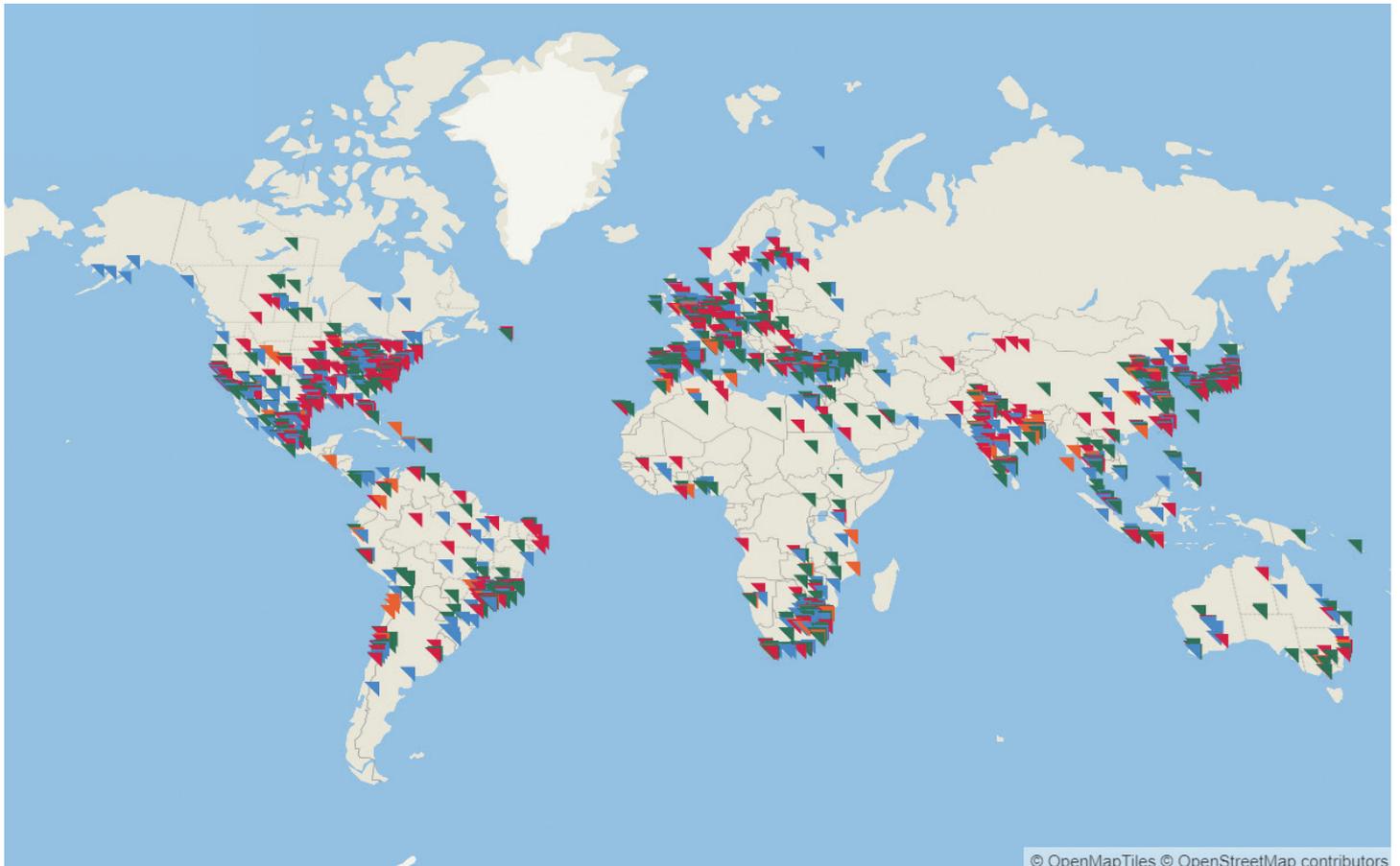
Response rate by sector



For more information on each sector's performance, see our sector summaries on p.18

Facilities at risk across the world

Water withdrawals in 2018: ▲ About the same ▲ Higher ▲ Lower ▲ First year of measurement



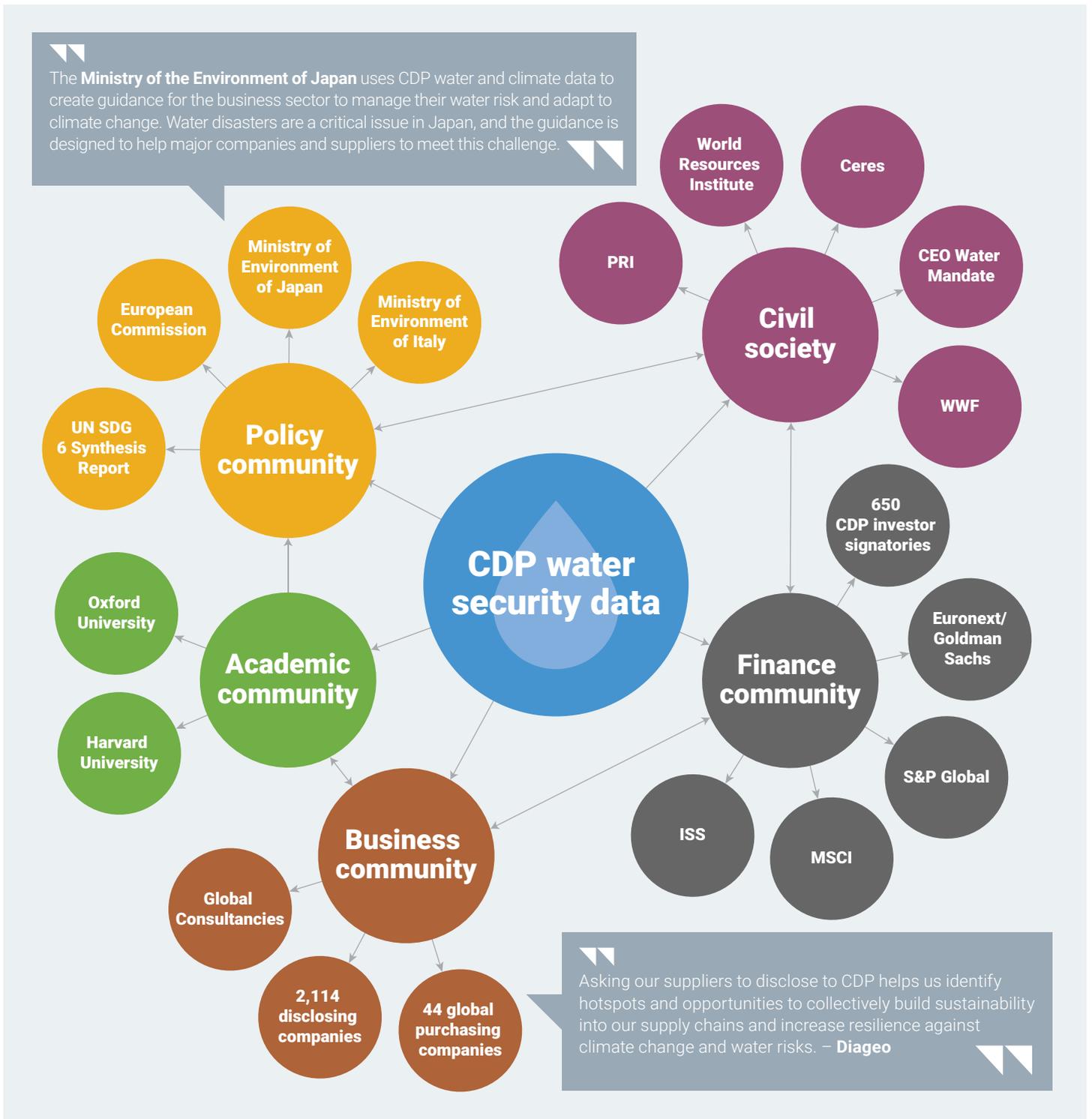
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For more information on each country's performance, see Appendix III on p.42

CDP'S WATER SECURITY DATA ACROSS THE MARKET

The benefit of reporting through CDP is that companies disclose standardized, comparable in one place annually, and their data is then used by a range of different organizations across the globe. This diagram maps just some of the organizations that used CDP data in 2018 to advance water security.

CDP's water security data reaches hundreds of investors, influencing the financial community through the development of investment research, products and ratings. Our data also helps businesses to inform their strategy. We work with a range of NGOs on water security issues, and increasingly, governments and policymakers are also using CDP water security data to inform their decisions.



GLOBAL ANALYSIS & INSIGHTS

The world is not on track to meet our global water goal of ensuring availability and sustainable management of water and sanitation for all. The 2018 United Nations report on Sustainable Development Goal 6 was a stark reminder of this. Unsurprisingly, evidence is mounting that a failure to achieve our global goals poses a serious threat to financial stability.

In January of this year, the Dutch central bank, **DNB**, reported that the Dutch financial sector's exposure to the most water-scarce regions and most impactful companies totals €97 billion³. And yet, competition for the world's finite amount of freshwater continues to increase while quality worsens.

Delivering a water secure future will require a complete transformation of our global economy – and the private sector is vital to this effort. Companies in the food, textile, energy, industrial, chemicals, pharmaceuticals and mining sectors account for and wield influence over 70% of the world's freshwater use and pollution. In almost all cases, their business models, practices and products do not align with a water secure future, a future in which SDG 6 has been achieved.

The financial impact of this situation is already being felt by companies, with US\$38.5 billion in water-related financial losses experienced this year by responding companies. Two companies – **Vale** and the **Tokyo Electric Power Company** – account for the lion's share of these impacts (US\$29.2 billion). But even with these removed, the total financial losses experienced this year (US\$9.27 billion) is up from 2017. Further, there is reason to believe that this financial loss figure may be higher in reality, given that at least 50 companies were unable to provide financial figures for the impacts reported.

As water crises worsen, these high impact companies are increasingly exposed to risks that could threaten their reputations, revenue and financial stability. On the other hand, as governments around the world move to address this issue and achieve SDG 6, companies, and the investors and banks fueling them, face substantial transition risks of stranded assets if they fail to move with the times. In other words, if they fail to consider how their business models, products and practices must change to decouple production and consumption from the depletion of water resources.

Investors are increasingly calling on companies to take such steps. In 2018, 650 institutional investors with over US\$87 trillion in assets invited 1,536 of the world's largest publicly listed, high impact companies to disclose water-related information through CDP. These companies depend on a stable supply of good quality water for success. 783 companies – or 51% – responded to their investors, demonstrating some progress towards better water performance.

However, important sectors are lagging behind their peers. Of particular concern is the Retail sector, which moved ahead of the Fossil Fuels sector for the first time in terms of poor performance on both transparency – just 24% of retail companies responded – and action – fewer than 25% have water-related targets or goals and only 54% engage suppliers on water risks and impacts. With revenues anticipated to reach US\$28 trillion this year⁴, this sector is more powerful than ever. Made up of those companies near the top of the agricultural value chain, the retail sector enables agribusinesses to pump ever increasing amounts of non-renewable groundwater, it enables dyehouses to release toxic pollution, and consumers to buy ever cheaper meat, but it can also be the key to changing all of this.

3. https://www.dnb.nl/en/binaries/Values%20at%20Risk%20-%20Sustainability%20Risks%20and%20Goals%20in%20the%20Dutch_tcm47-381617.pdf

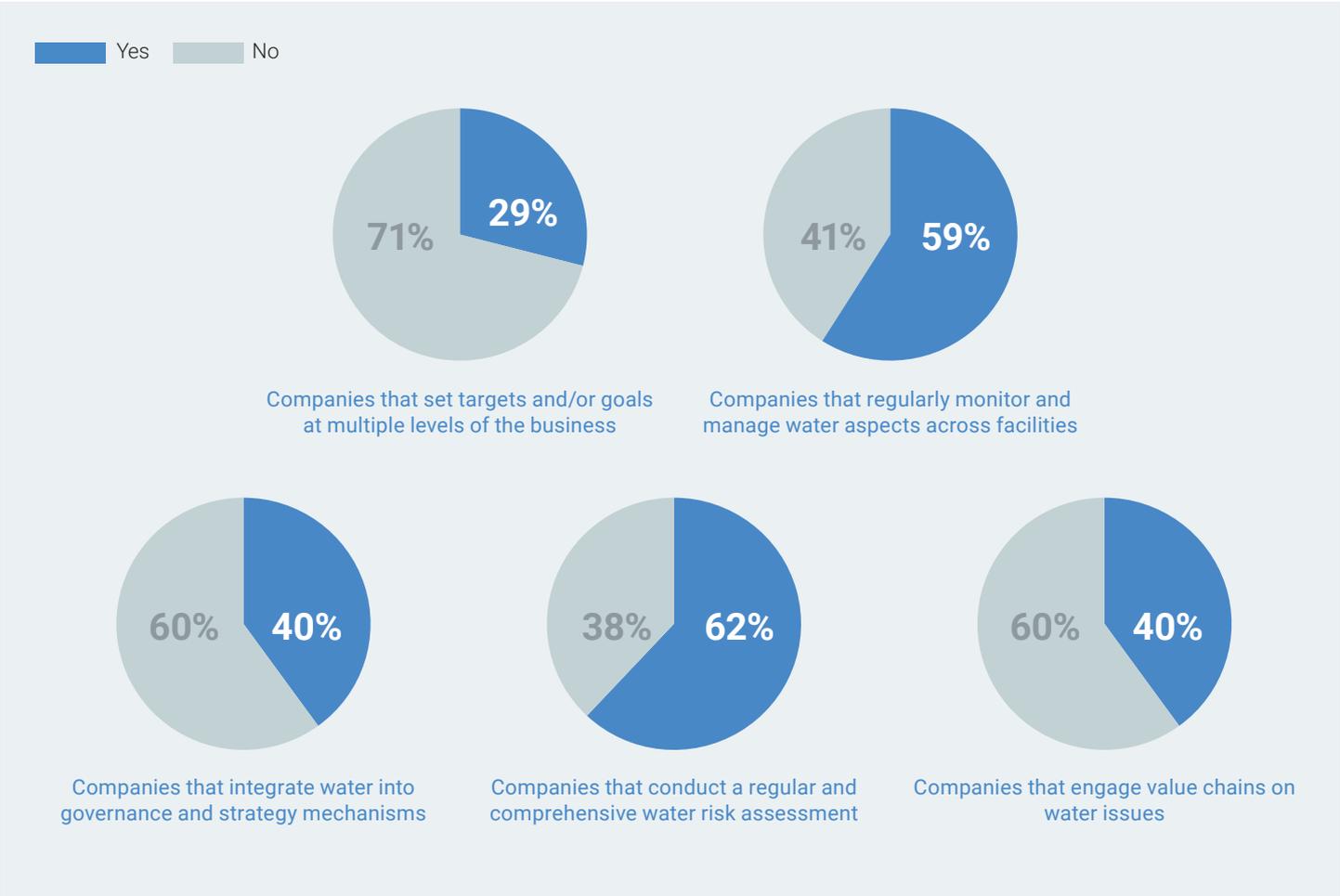
4. <https://www.researchandmarkets.com/reports/3766834/overview-and-evolution-of-the-global-retail>

GLOBAL ANALYSIS & INSIGHTS

Sectors with largest financial impacts

	Financial impacts reported	Most common impacts	Most common responses
 <p>Mineral Extraction</p>	US\$20.5 billion	<ul style="list-style-type: none"> Increased operating costs Reduction/disruption in production capacity Fines, penalties or enforcement orders 	<ul style="list-style-type: none"> Adopt water efficiency, water re-use, recycling and conservation practices Pollution abatement and control measures Engage with regulators/policymakers
 <p>Power Generation</p>	US\$9.6 billion	<ul style="list-style-type: none"> Increased operating costs Impact on company assets Increased compliance costs 	<ul style="list-style-type: none"> Engage with regulators/policymakers Infrastructure maintenance Increased capital expenditure
 <p>Biotech, Health Care & Pharma</p>	US\$3.5 billion	<ul style="list-style-type: none"> Reduction/disruption in production capacity Constraint to growth Increased operating costs 	<ul style="list-style-type: none"> Adopt water efficiency, water re-use, recycling and conservation practices Amend the Business Continuity Plan Secure alternative water supply

Company performance on key water metrics



GLOBAL ANALYSIS & INSIGHTS

Increasing risks, increasing withdrawals

Decoupling production and consumption from the depletion of water resources requires greater levels of ambition, transparency and innovation. Our analysis suggests that the pace and scale of change we are seeing from the corporate world is insufficient to meet this challenge.

This year, we examined 296 of the world's largest companies that have consistently reported water information through CDP between 2015 and 2018. This cohort identified more substantive water risks year-on-year (75% in 2018, up from 70% in 2015) and the number setting targets to reduce water withdrawals doubled over the four-year period. But this ambition has not translated into actual reduced dependence on water resources, with an almost 50% increase in the number of companies reporting higher water withdrawals.

This worrying trend holds both for company-wide water withdrawal figures and figures for sites facing substantial water risks, with the biggest increases among companies in the Food, Beverage & Agriculture, Manufacturing and Mineral Extraction sectors, and those operating in Asia and Latin America. Further, while there has been a modest reduction (7%) in the number of companies reporting withdrawals from non-renewable groundwater, companies reporting higher withdrawals from all other sources, including renewable groundwater and surface water, has risen on average 35%.

The most common explanation that companies provide for increased withdrawals is an increase in production. For example, US beverage producer, **Constellation Brands, Inc.** attributed the increase in withdrawals in 2018 to a rise in production, improved metering at some locations and extreme weather conditions throughout the world necessitating a need for increased water use for irrigation. And **Marfrig Global Foods** report that their withdrawals from non-renewable groundwater were 11% higher in 2018 than in the previous year. Groundwater represents 38% of their total water withdrawal and the increase was due to the opening of new operating plants in 2017.

Unlike carbon, we are not in a race to zero when it comes to water withdrawals – companies and people alike will always need a certain amount of water to survive and thrive. But as water availability and quality decreases around the world, a failure by business to deliver even a modest reduction on this indicator is concerning.

The Water A List: Raising the bar on corporate water action

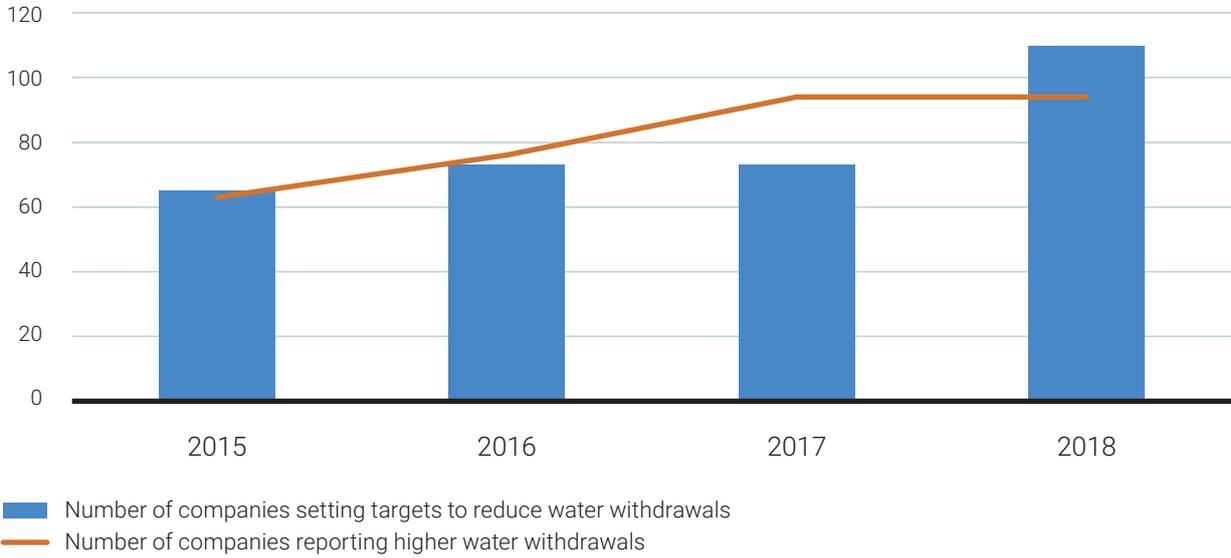
Given the scale of the water challenges we face, the incremental changes we're seeing from many companies – acting a little more efficiently or a little more collaboratively – are unlikely to cut it. Delivering a water secure future not only means better water management but, importantly, better business management. For example, **AstraZeneca** has developed a global strategy to cap water use at 2015 levels through to 2025, while doubling revenue. And **Sony Corporation** is diversifying its business model to develop new technologies in the agricultural sector that improve productivity and reduce environmental impact. The company estimates the opportunity could be worth US\$4.1 billion over the next four to six years.

In recognition of the changes needed, CDP raised the bar for corporate leadership on water security in 2018. To make the Water Security A List, companies must now show that they regularly monitor and manage water aspects relevant to their activities through the whole value chain, that they have regular and comprehensive water risk assessment procedures that are grounded in the river basin and a solid understanding of how water issues could impact their financial performance. At the same time, they should show that they have implemented a genuine strategic response to these risks, i.e. a company's governance mechanisms and long-term business and financial strategies must be informed by and working to address water security issues.

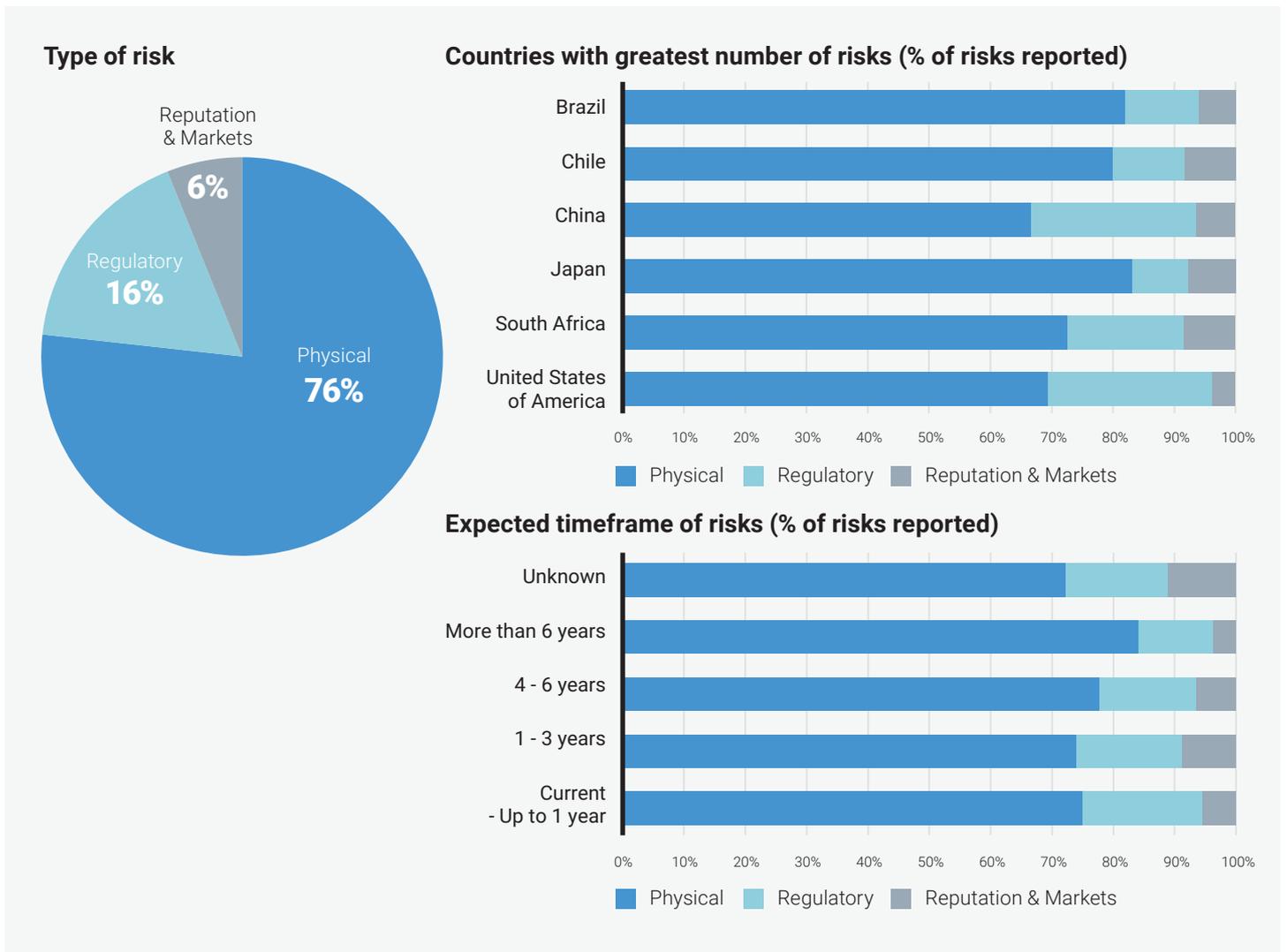
While some (31), including global drinks company **Diageo**, French beauty giant **L'Oréal** and Brazilian petrochemical company **Braskem** were able to meet these higher standards and achieve leadership status, the vast majority (752) were not. All company scores and response statuses can be found in Appendix IV, p.46.

GLOBAL ANALYSIS & INSIGHTS

Water withdrawals reported by cohort in 2018



Risks reported by cohort in 2018



CDP'S WATER A LIST 2018



**Biotech, Health
Care & Pharma**

- ▼ **AstraZeneca**
United Kingdom
- ▼ **Bayer AG**
Germany



**Food, Beverage
& Agriculture**

- ▼ **Altria Group, Inc.**
United States
- ▼ **Asahi Group Holdings, Ltd.**
Japan
- ▼ **Coca-Cola European Partners**
United Kingdom
- ▼ **Diageo Plc**
United Kingdom
- ▼ **General Mills Inc.**
United States
- ▼ **Kirin Holdings Co Ltd**
Japan
- ▼ **Suntory Beverage & Food**
Japan



Fossil Fuels

- ▼ **Galp Energia SA**
Portugal



Hospitality

- ▼ **Las Vegas Sands Corporation**
United States



Infrastructure

- ▼ **Acciona S.A.**
Spain



Materials

- ▼ **Klabin S/A**
Brazil
- ▼ **LIXIL Group Corporation**
Japan



Manufacturing

- ▼ **Braskem S/A**
Brazil
- ▼ **Brembo SpA**
Italy
- ▼ **CNH Industrial NV**
United Kingdom
- ▼ **Firmenich SA**
Switzerland
- ▼ **Ford Motor Company**
United States
- ▼ **International Flavors & Fragrances Inc.**
United States
- ▼ **KAO Corporation**
Japan
- ▼ **LG Display**
Republic of Korea
- ▼ **LG Innotek**
Republic of Korea
- ▼ **L'Oréal**
France
- ▼ **Metsä Board**
Finland
- ▼ **Mitsubishi Electric Corporation**
Japan
- ▼ **Nabtesco Corporation**
Japan
- ▼ **Stanley Black & Decker, Inc.**
United States
- ▼ **Toyota Industries Corporation**
Japan



Retail

- ▼ **Gap Inc.**
United States



Services

- ▼ **Microsoft Corporation**
United States

GLOBAL ANALYSIS & INSIGHTS

Embedding water into corporate governance

Companies will not achieve the transformations needed until water is meaningfully embedded into corporate governance. Environmental and sustainability professionals can make incremental improvements to a company's water performance, but it is the strategic decisions taken by the CEO and the Board that will truly transform outcomes for a water secure future. Decisions, for example, associated with product development, market expansion, or resource allocation, all have the potential to significantly reduce or even eliminate a company's negative environmental impacts. And increasingly, investors are looking to hold C-Suite decision makers accountable for their performance on water-related issues.

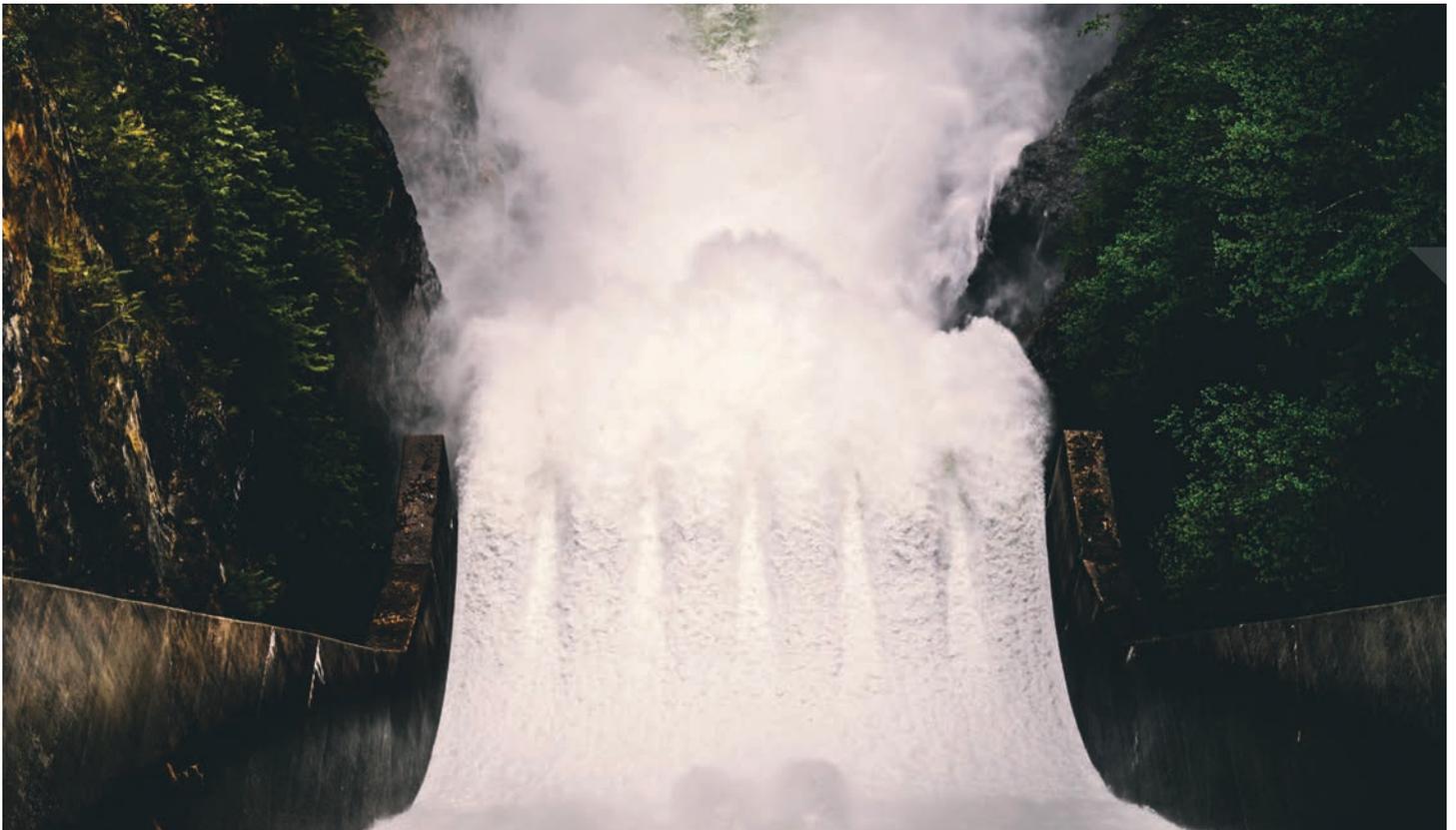
For the first time in 2018, we are able to assess just how many companies in high impact sectors are rewarding their C-Suite officers for performance on water-related issues⁵. Although 77% of this group report exposure to substantive water risks, and 93% report that they have board-level oversight of water issues, under a third (31%) have incentives in place for C-Suite executives to reduce water withdrawals and just 15% have incentives tied to avoidance of pollution.

For example, German chemicals company **Symrise AG** ties 10% of its CEO, chief finance (CFO) and chief strategy (CSO) officers' bonuses to achieving corporate sustainability targets. These include strategic water-related company targets, such as the annual reduction of wastewater loadings by 4%, increasing the number and percentage of strategic suppliers participating in CDP's supply chain program, and the company's CDP scores for water, climate and forests.

Accelerating the transition to a water-secure economy

Achieving SDG 6 is possible. To succeed, those companies that affect our freshwater must go to work to protect it. The business risks of inaction are very real but so too are the opportunities lost. Mainstream financial institutions are moving to seize these opportunities. Indices such as the **Euronext** and **Goldman Sachs** CDP Environment France Index favor companies that perform better on water issues, and banks are now rewarding leading companies with preferential interest rates for better sustainability performance, such as **BBVA's** Sustainability Improver Loan.

The reality, risks and opportunities of a water secure future must be embedded within business, financial and policy decision making. Corporate transparency plays a vital role in driving the transition to a water secure future by catalyzing a desire to grow differently amongst the private sector and its extensive supply chains. As the market matures, CDP will continue to raise the bar on corporate water performance to spark the systemic transformations needed to decouple production and consumption from the depletion of water resources.



5. In 2018, we introduced a question on water performance incentives for the C-Suite in five high impact sectors: food, beverage and tobacco, metals and mining, oil and gas, electric utilities and chemicals. Only the analysis of the responses from companies that were presented with the question are shown here.

Sector summaries



INTRODUCTION

These sector summaries provide a simple way for investors and others to compare company performance on key water issues across industry sectors. Investors can assess strengths and weaknesses and use this information to inform corporate engagement and facilitate improved disclosure and action.

The sectors are defined by CDP's new Activity Classification System, which categorizes companies by the diverse activities from which they derive revenue, and associates these activities with how they impact on water security. You can find a full list of all companies invited to respond, their response status and score in Appendix IV on p.46.

The sectors analyzed in these pages are:

The image displays ten industry sectors, each represented by a circular icon and a text label below it. The icons are arranged in a grid-like fashion. The sectors are: Apparel (blue circle with a hanger), Biotech, Health Care & Pharma (orange circle with a pill), Food, Beverage & Agriculture (light orange circle with a loaf of bread), Fossil Fuels (red circle with a flame), Hospitality (green circle with a hand holding a bell), Infrastructure (gold circle with a bridge), Manufacturing (teal circle with a gear and crane), Materials (light blue circle with a truck), Mineral Extraction (blue circle with a vertical bar), Power Generation (grey circle with a power plant), and Retail (orange circle with a shopping cart).

- Apparel
- Biotech, Health Care & Pharma
- Food, Beverage & Agriculture
- Fossil Fuels
- Hospitality
- Infrastructure
- Manufacturing
- Materials
- Mineral Extraction
- Power Generation
- Retail

KEY METRICS

CDP has identified six key management behaviors that investors can expect of any company. These metrics are aligned with our 2018 scoring methodology and you can read more about how they are calculated in our report methodology on p.36.



Transparency

Does the company respond to the request for information via CDP?

Some companies report some water-related metrics in their sustainability reports, but this information is often incomplete and not comparable. CDP offers the only platform for companies to disclose material water-related information in a standardized format. Disclosing via CDP enables a company to better understand its risk exposure, identify actions to mitigate these risks and seize a competitive advantage.



Risk Assessment

Does the company conduct a regular risk assessment including river basin management authorities?

Water issues differ greatly from one river basin to another. A company considering its water use alongside the physical, regulatory, social, environmental and temporal context within which it and its suppliers operate, has a far greater chance of understanding and enhancing its resilience.



Governance & Strategy

Does the company:

- ▶ **have board-level oversight of water issues;**
- ▶ **integrate water into long-term business objectives and;**
- ▶ **have a publicly available water policy?**

Water governance must be in the boardroom of every company that can impact on, or be impacted by, water resources. By providing board members with the information and tools to plan for a transition to a water-secure world and by publicly monitoring progress, water security can become part of companies' modus operandi.



Targets & Goals

Does the company set company-wide targets and/or goals that are monitored at the corporate level and targets and/or goals for any two of the following business activity, site/facility, brand, country, or river basin?

Companies must set and achieve ambitious targets to reduce impacts on water availability and quality. Targets can be set at different levels within the company from facilities to products to regions, but all should be tracked at the corporate level. This allows the targets to be incorporated into the company's overall strategy and performance KPIs, enhancing the chance of success.



Measuring & Monitoring

Does the company measure all water aspects at 75% of facilities?

As the saying goes, what gets measured gets managed. Robust water accounting data is necessary to inform business planning and forecasting as well as risk identification and response. Companies should regularly measure all water aspects: withdrawals, discharges, quality, consumption, and employee access to WASH (Water, Sanitation and Hygiene).



Value Chain Engagement

Does the company actively engage value chain (suppliers, customers or other value chain partners) on water-related issues?

Companies that leverage their procurement power can drive change at greater pace and scale through value chains. By engaging value chain partners on water issues, companies can gather a more complete picture of their water risk exposure and incentivize sustainable behavior among both suppliers and customers. Examples of action include onboarding & compliance; incentivizing improved water management and stewardship; and innovation & collaboration with value chain partners.

HEATMAP

So, how have companies performed on these key management behaviors in 2018?

The heatmap below provides performance by sector, marking in green the best performers and in red the worst, relative to other sectors. In most cases, there is significant room for improvement.

Key:

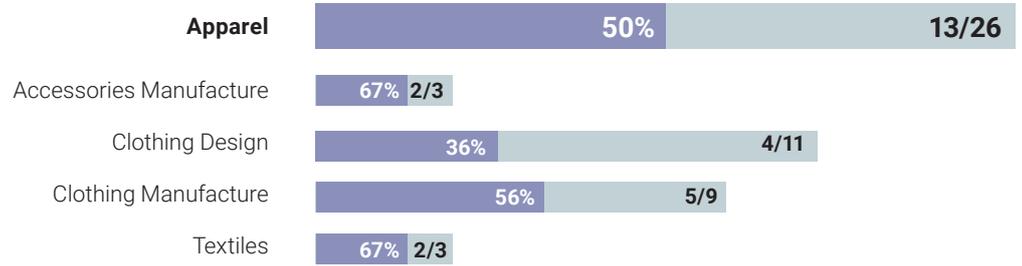
- Best performing sector
- Worst performing sector

						
	Transparency	Governance & Strategy	Measuring & Monitoring	Risk Assessment	Targets & Goals	Value Chain Engagement
Apparel	50%	46%	31%	62%	38%	55%
Biotech, Health Care & Pharma	62%	39%	63%	60%	31%	47%
Food, Beverage & Agriculture	58%	51%	78%	67%	41%	53%
Fossil Fuels	31%	40%	62%	62%	26%	21%
Hospitality	50%	25%	31%	25%	31%	50%
Infrastructure	41%	59%	56%	73%	26%	29%
Manufacturing	60%	33%	59%	61%	27%	39%
Materials	49%	48%	64%	79%	34%	42%
Mineral Extraction	49%	47%	88%	72%	16%	23%
Power Generation	41%	50%	71%	68%	43%	41%
Retail	24%	32%	18%	32%	25%	54%
Total :	51%	40%	59%	62%	29%	40%



APPAREL

Response rate



How is water material to the Apparel sector?

In the Apparel sector, water is used for dyeing and bleaching, cooling, cleaning and painting processes. Thousands of chemicals are used in these processes and companies across the apparel value chain can face regulatory and reputational risks if wastewater is not properly treated. In addition, textile manufacturers rely heavily on water in the value chain for the irrigation of cotton and other natural fibers, and for leather production for the irrigation of feedstock for cattle. Finally, the use phase of products is an emerging risk for the sector, for example as microplastics enter water bodies from the washing of synthetic materials.

Cross-sector average	Apparel sector performance
 Transparency 51%	50%
 Governance & Strategy 40%	46%
 Measuring & Monitoring 59%	31%
 Risk Assessment 62%	62%
 Targets & Goals 29%	38%
 Value Chain Engagement 40%	55%

The Apparel sector significantly underperforms on measuring & monitoring water aspects – a cause for investor concern given the sector's contribution to water pollution. Just four companies in the sector monitor total discharge volumes. Investors should ask questions about company procedures for measuring and monitoring withdrawals, discharges, consumption and WASH services for employees.

The sector must improve its public commitments on water issues. The most common targets relate to water consumption and product water intensity, but much more can be done on the prevention of water pollution and WASH provision. Investors should check for targets aligned with existing initiatives like Zero Discharge of Hazardous Chemicals (ZDHC), and the Sustainable Apparel Coalition.

Encouragingly, the sector outperforms others on engaging the value chain on water issues. This is a critical area for action, as water use and pollution by suppliers can cause significant brand damage and production disruptions. Furthermore, consumers are increasingly aware of the impact of their clothes on the environment.



BIOTECH, HEALTH CARE & PHARMA

Response rate

Biotech, Health Care & Pharma



Biotech & Pharma



Health Care Provision



Medical Equipment & Supplies



How is water material to the Biotech, Health Care & Pharma sector?

This sector is primarily comprised of pharmaceuticals companies, with some medical equipment and biotechnology companies and a smaller contingent of health care services companies. For pharmaceuticals companies, water plays a critical and varied role as a reagent, solvent and cleaning agent, and companies often require high quality and ultra-pure water in the production and delivery of products⁶. Monitoring water discharge quality is also a key consideration as companies must comply with regulations concerning the removal of pharmaceutical compounds from discharged water. The water-energy nexus is often explicit in this sector as manufacturing plants require cooling systems that can vary in their water and energy efficiency. Companies may have to trade off emissions reductions goals against efforts to reduce water dependence.

Cross-sector average	Biotech, Health Care & Pharma sector performance
<p>Transparency 51%</p>	62%
<p>Governance & Strategy 40%</p>	39%
<p>Measuring & Monitoring 59%</p>	63%
<p>Risk Assessment 62%</p>	60%
<p>Targets & Goals 29%</p>	31%
<p>Value Chain Engagement 40%</p>	47%

The sector has the second highest disclosure rate, with large multinationals such as **AstraZeneca** and **Bayer** making the 2018 Water A List.

The sector must rapidly step up the ambition and number of the water related targets and goals that it sets. Just two reporting companies have a water recycling target and none have set a watershed remediation or ecosystem preservation goal. Investors should challenge these companies to set ambitious, public goals monitored at the corporate level.

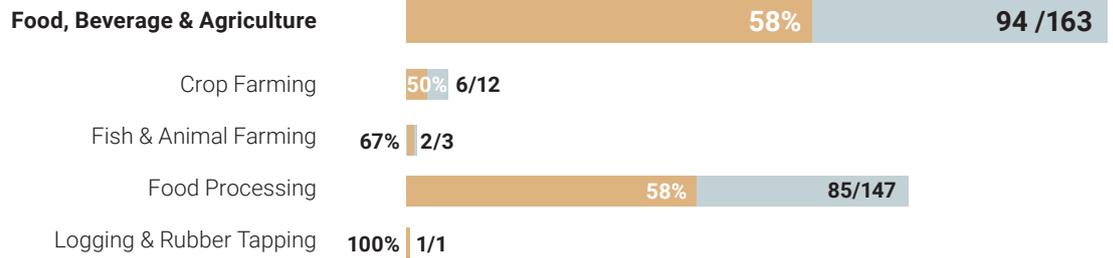
It is encouraging to see that the sector outperforms the average when it comes to engaging the value chain. For example, **Merck & Co.** has a 2018 target to collect water use data from at least 90% of strategic suppliers with the highest environmental impacts. Merck is working with other members of Pharmaceutical Supply Chain Initiative to obtain water use data from suppliers. In 2017, the company surveyed 224 suppliers, covering approximately 37% of procurement spend. This represents less than 1% of their total number of suppliers.

6. SUEZ (2017) Ultra-pure water use in semiconductor and pharmaceutical industries. [Online] Available: suezwaterhandbook.com/processes-and-technologies/treatment-and-conditioning-of-industrial-water/process-water-including-ultrapure-water/ultra-pure-water-used-in-semiconductor-and-pharmaceutical-industries



FOOD, BEVERAGE & AGRICULTURE

Response rate



Why water is material for the Food, Beverage & Agriculture sector

The agricultural sector accounts for almost 70% of the world's water consumption⁷, as water is as water is essential for the growing of crops and animals. Water is also used in the washing, boiling, packaging and transportation of agricultural commodities. For example, cleaning water can account for as much as 70% of overall water use in soft drinks manufacturing⁸. Water quality is also an issue: excessive or poor application of fertilizers and pesticides can lead to nitrate and phosphorus run-offs, polluting waterways and contaminating groundwater. It is estimated that better water management could boost crop production by 20% globally⁹.

Cross-sector average	Food, Beverage & Agriculture sector performance
 Transparency 51%	58%
 Governance & Strategy 40%	51%
 Measuring & Monitoring 59%	78%
 Risk Assessment 62%	67%
 Targets & Goals 29%	41%
 Value Chain Engagement 40%	53%

The sector beats the average, but there are still some major global food companies not disclosing water information to their investors, including **Kweichow Moutai**, **ITC Limited** and **Pernod Ricard**. Investors must engage this critical sector on their water use and management to ensure that risks are being managed appropriately.

The FBA sector leads on the setting of targets and goals, with excellent examples from companies like **AB InBev**, which includes water-related goals in executive targets and financial rewards. The company's two goals for 2025 are broken down in annual milestones and evaluated on an annual basis. These goals comprise between 10-25% of the annual monetary incentives of the executives directly involved.

Encouragingly, the sector is the best performer on value chain engagement, with a clear majority of companies requesting water-related information from value chain partners.

7. http://www.fao.org/nr/water/aquastat/water_use/index.stm

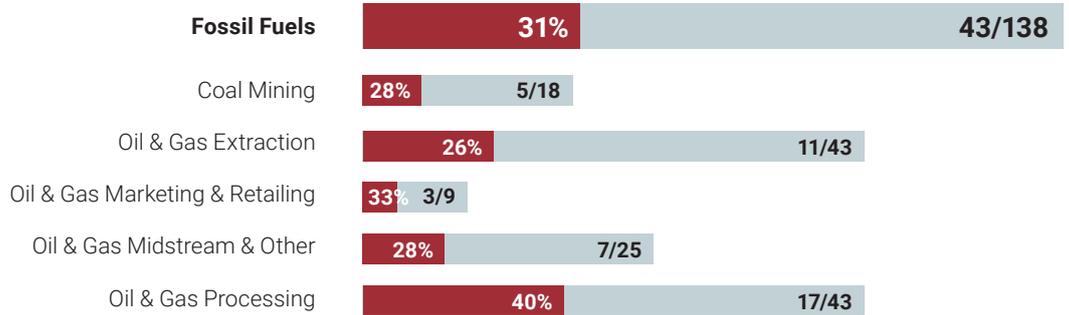
8. WRAP. Drinks Resource Maps – Summary and overview. Available at: http://www.wrapcymru.org.uk/sites/files/wrap/Drinks%20Resource%20Maps%20Summary%20FINAL%20010512%20AG%2020_0.pdf

9. <http://unesdoc.unesco.org/images/0026/002614/261424e.pdf>



FOSSIL FUELS

Response rate



Why water is material for the Fossil Fuels sector

Water underpins the exploration, production and refining of fossil fuels, being involved in most parts of the value chain from construction to drilling, pumping, treatment and cooling. The International Energy Agency says that global water consumption for power generation and fuel production is expected to more than double from 66 billion cubic meters (bcm) in 2010, to 135 bcm by 2035. Coal accounts for 50% of this growth and is one of the most-water intensive methods of generating electricity. For some production techniques such as hydraulic fracturing and oil sands, large volumes of water are required to extract the resource. A major risk within the industry is water pollution which can arise from spills, cross-aquifer mixing, drill muds and cuttings, disruption and pollution of surface water and groundwater through water discharge, contamination by pump leakages and oil spillages during transportation. The extraction of hydrocarbons also produces large volumes of water, which must be safely managed. Oil & gas refining is a water-intensive process and there is also high water pollution potential if products are spilled. Retailers, midstream, and oil & gas services companies share water pollution and reputational risk with their clients.

Cross-sector average	Fossil Fuels sector performance
 Transparency 51%	31%
 Governance & Strategy 40%	40%
 Measuring & Monitoring 59%	62%
 Risk Assessment 62%	62%
 Targets & Goals 29%	26%
 Value Chain Engagement 40%	21%

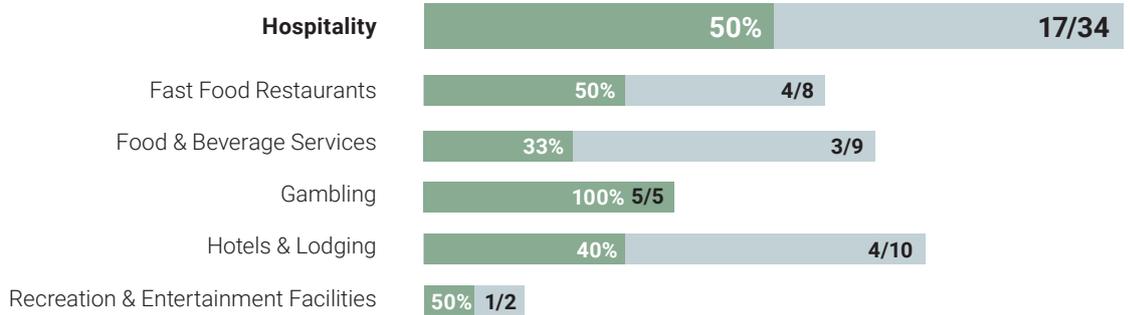
This sector has consistently had one of the lowest response rates of all sectors since the inception of CDP's Water Security program. Investors should expect greater transparency from oil and gas majors given the large volumes of water these companies manage on a daily basis, and the well-documented potential for water pollution from their activities. Major non-disclosers include **Exxon Mobil Corporation, Royal Dutch Shell,** and **Chevron Corporation.**

The sector achieves average performance for the inclusion of water issues into governance and strategy mechanisms, but investors should expect this of all Fossil Fuel companies. Climate change is now embedded into the strategy of these companies, and water should be too. For example, the Task Force on Climate Related Financial Disclosures requests water metrics from the energy sector.



HOSPITALITY

Response rate



Why water is material for the Hospitality sector

Many companies in the hospitality sector have water intensive supply chains through agricultural production of the food and beverages that they sell. Companies in this sector often have large real estate holdings that can be severely affected by water pollution and scarcity. For example, water consumption for hotel chains can be high and hotels can be located in water stressed locations. Cost is also a factor: water accounts for 10% of utility bills in many hotels. These companies can drive change and reduce water impacts through working collaboratively with their value chain – suppliers and consumers alike.

Cross-sector average	Hospitality sector performance
 Transparency 51%	50%
 Governance & Strategy 40%	25%
 Measuring & Monitoring 59%	31%
 Risk Assessment 62%	25%
 Targets & Goals 29%	31%
 Value Chain Engagement 40%	50%

The sector does not achieve the average response rate, with major names such as **Oriental Land Co Ltd., Restaurant Brands International** and **Chipotle Mexican Grill** not disclosing. Investors must encourage a significant increase in transparency from this sector, which relies heavily on water.

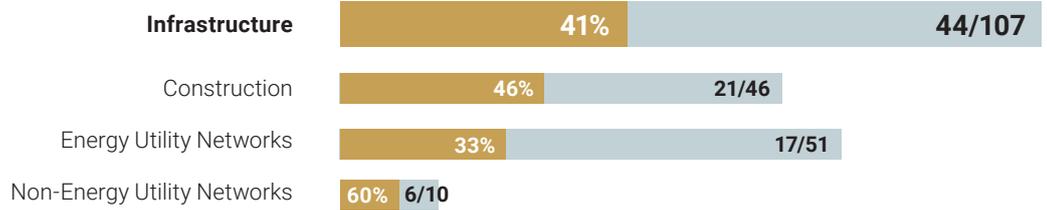
The sector is the worst performer on the integration of water issues into business governance and strategy. Investors must encourage restaurant chains and hoteliers to raise the strategic importance of water issues within the business, ensuring that the board has oversight of risks and opportunities.

Companies in this sector often have estates across the world, for example, restaurants and hotel chains. It is therefore concerning that companies are not undertaking the comprehensive risks assessments necessary to map which sites are in water-stressed areas, and understand the location and magnitude of water risks. For example, **Intercontinental Hotels** reports that they completed a comprehensive water risk assessment across their global estate in 2016, finding that 2,414 facilities, or 47% of all their hotels, are exposed to substantive water risk.



INFRASTRUCTURE

Response rate



Why water is material for the Infrastructure sector

The Construction sub-sector is dependent on cement and other water-reliant construction materials. Construction companies have also reported that significant change in precipitation and increased sudden extreme rainfall is a risk for their sites. For Utility Networks, there is water-related risk through potential issues with flooding, water access and water pollution. Energy Utility Networks often have water intensive supply chains (coal, natural gas, shale gas fracking); and a potential risk to their business reputationally through media interest.

Cross-sector average	Infrastructure sector performance
 Transparency 51%	41%
 Governance & Strategy 40%	59%
 Measuring & Monitoring 59%	56%
 Risk Assessment 62%	73%
 Targets & Goals 29%	26%
 Value Chain Engagement 40%	29%

With the third lowest response rate, transparency is poor within this sector. Major non-responding companies include **Public Service Enterprise Group Inc.**, **Larsen & Toubro**, and **Consolidated Edison, Inc.**

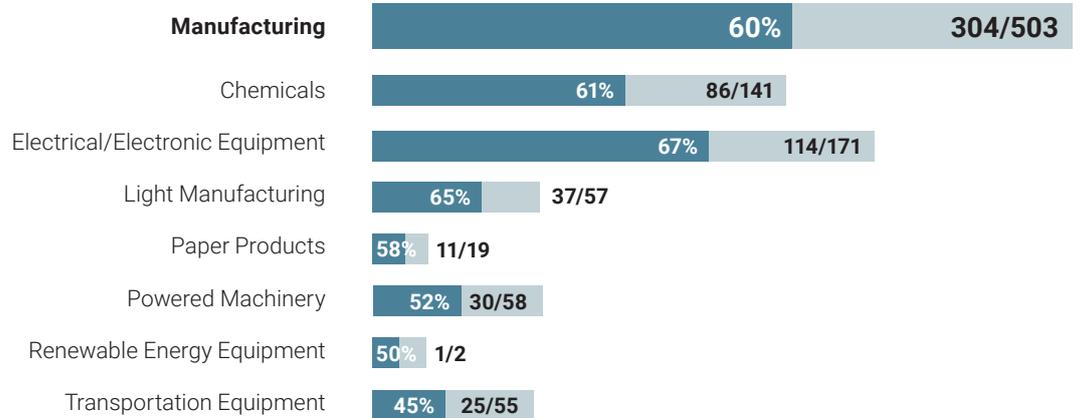
Outperforming the sector average, it is encouraging to see the majority of companies undertaking comprehensive water risk assessments that include contextual issues and key stakeholders. 94% include regulators and 86% include river basin management authorities into risk assessments.

It is deeply concerning that Infrastructure companies are failing to adequately engage their value chain on water issues given the water risks associated with cement and concrete for the construction sub-sector, and coal and gas for energy utilities.



MANUFACTURING

Response rate



Why water is material for the Manufacturing sector

Manufacturing is a diverse sector, and key water uses in the major sub-sectors are outlined below.

- ▶ The Chemicals sub-sector is highly water intensive: water is used for cooling purposes (90%) but also as a raw material, in cleaning, transport, as a solvent and as part of the final product. The sector faces the risk of spillage of hazardous chemicals which can affect the quality of local water resources.
- ▶ Electrical Equipment covers components such as displays and touch screens as well as lighting, heating ventilation, air conditioning, power tools, power management, control, automation and robotic actuators. Ultra-pure water is required to manufacture many of these items, including semiconductors.
- ▶ Light Manufacturing covers the manufacture of metal parts, which has a water-intensive supply chain via mining, and the manufacture of plastic products among other things. Water is used primarily for cooling and cleaning, and ultra-pure water is required for some processes. Furthermore, rinse water used in the production of aluminum, titanium and other composites produces high levels of hazardous wastes and must be precisely treated.
- ▶ Transportation Equipment covers auto manufacturing, which uses water for surface treatment and coating, paint spray booths, washing, rinsing, hosing, cooling, air-conditioning systems and boilers. Wastewater then needs to be treated to high standards in order to meet environmental regulations. This sub-sector also has a water intensive supply chain, as water is required to produce many auto components.



Cross-sector average	Manufacturing sector performance
 Transparency 51%	60%
 Governance & Strategy 40%	33%
 Measuring & Monitoring 59%	59%
 Risk Assessment 62%	61%
 Targets & Goals 29%	27%
 Value Chain Engagement 40%	39%

Transparency is relatively high in this sector, but still 200 companies such as **Apple Inc.**, **Unilever Nv Cva** and **Broadcom Limited** still fail to disclose critical water related information to their investors.

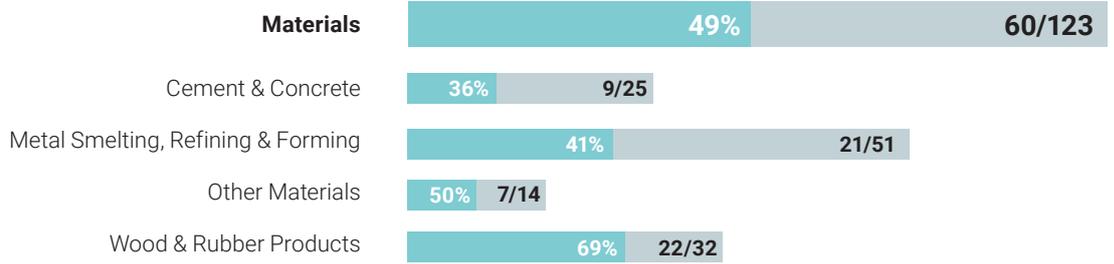
Given that most manufacturing processes are water-critical, it is concerning that water issues are not yet widely integrated into company governance and strategy procedures. Some companies however, are incentivizing positive change at the highest levels of corporate governance such as **Braskem S/A**, which provides incentives to the C-suite for the achievement of company water targets.

The Manufacturing sector should be leading the way in the setting of targets and goals – both efficiency targets per product and, crucially, reduction and elimination of water pollution. Investors should challenge companies in this sector to set reaching targets. For example, **Ford Motor Company** aims to reduce water use per vehicle produced by 30 percent from 2015 to 2020, with the ultimate goal of manufacturing vehicles without withdrawing any drinkable water.



MATERIALS

Response rate



Why water is material for the Materials sector

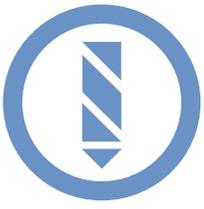
- For wood products such as pulp and paper, water is used to create the pulp and flush away unwanted impurities. Industrial effluent from mills can contain toxic and non-biodegradable organic materials. Deforestation in service to this sector poses a substantial risk for water security worldwide.
- Cement production requires significant amounts of water for cooling heavy equipment and exhaust gases, in emission control systems such as wet scrubbers, as well as for preparing slurry in wet process kilns. Discharged water may be altered in terms of temperature, acidity or suspended solids with potential impacts for the discharge environment.
- Companies involved in Metal Smelting, Refining & Forming have a water-intensive supply chain (mining) and require large quantities of cooling water. End products are used as raw materials in the Manufacturing and Infrastructure sectors, which also rely on water.
- The 'Other materials' sector includes glass products and ceramics. Water is used in virtually all ceramic processes, and wastewater can contain minerals and some heavy metals which must be treated carefully.

Cross-sector average	Materials sector performance
 Transparency 51%	49%
 Governance & Strategy 40%	48%
 Measuring & Monitoring 59%	64%
 Risk Assessment 62%	79%
 Targets & Goals 29%	34%
 Value Chain Engagement 40%	42%

Materials companies outperform the cross-sector average for governance and strategy, but at 48% there is still room for improvement, particularly in the adoption of water policies. For example, **Saint-Gobain's** water policy, adopted in 2011, affirms a long-term objective for zero discharge of industrial water in liquid form, while avoiding generating new impacts for other natural environments and for other parties involved. The company has also defined a water standard that sets out minimum requirements for industrial sites must on water management and the prevention of risks of water constraints, pollution and flooding. The policy also requires that all stakeholders throughout the value chain, including suppliers, are considered into consideration. The list of priority sites within the framework of the Water policy is based on both water withdrawals and the water stressed areas.

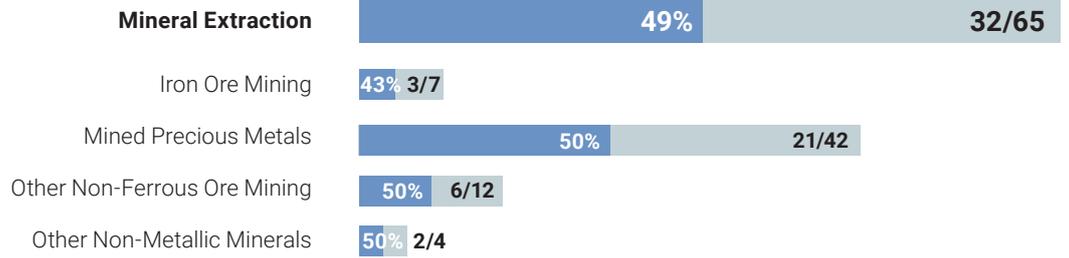
Outperforming every other sector, 79% of companies in the Materials sector such as **Duratex S/A, LIXIL Group Corporation** and **Tata Steel** have a comprehensive water risk assessment in place.

The Materials sector ranks the third highest across sectors when it comes to setting targets and goals, but there is significant room for improvement. For example, companies can ratchet their targets once achieved. In 2017, **Cementos Argos** achieved its water consumption goal of using 455 litres per tonne of cement compared with a baseline year of 2012, when the company used 649 litres of water per tonne. The company has now ratcheted that target, aiming to reach 256 litres per tonne by 2025.



MINERAL EXTRACTION

Response rate



Why water is material for the Mineral Extraction sector

In mining, water is used to extract the raw material from the ground, to extract the desired element from the raw material, in the transport and storage of excess slurry, and for other processes such as dust suppression, cooling and employee requirements on site. Water pollution is a significant risk, to access minerals below the water table, mines need to 'dewater' and then safely dispose of this groundwater. Acid Mine Drainage and water pollution from tailings dams is a significant risk, even after the lifetime of a mine. Mining and mineral processing is also energy intensive, and water is often required to produce this energy.

Cross-sector average	Mineral Extraction sector performance
 Transparency 51%	49%
 Governance & Strategy 40%	47%
 Measuring & Monitoring 59%	88%
 Risk Assessment 62%	72%
 Targets & Goals 29%	16%
 Value Chain Engagement 40%	23%

Less than half of companies in this sector responded to the investor request for water-related information, with previous responders to CDP such as **BHP Billiton, Rio Tinto and MMC Norilsk Nickel OSJC** failing to disclose in 2018. This trend is deeply concerning considering recent tailings dams disasters and water pollution issues that have harmed the sector's reputation.

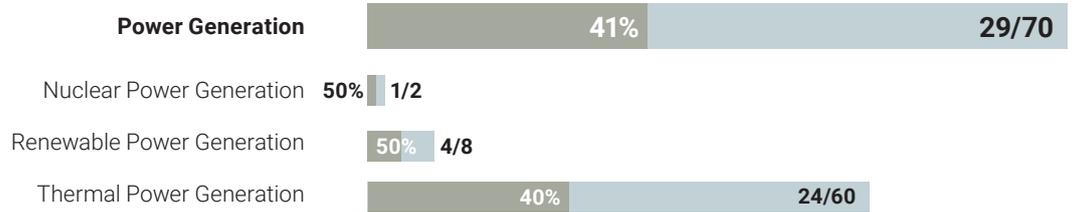
Encouragingly, the vast majority of responding companies report that they have strong measurement and monitoring practices in place. This rate is the highest of any sector, reflecting the critical importance of water to mining activities.

Given that more than half (52%) of respondents in this sector report exposure to substantive water risk, it's disappointing that only 16% of companies, the lowest of any sector, are setting multiple water targets and goals. Investors should challenge companies to set a range of ambitious water targets.



POWER GENERATION

Response rate



Why water is material for the Power Generation sector

The Power Generation sector is heavily dependent on water for cooling, and, in the case of hydroelectric generation plants, for power generation itself. For this reason, thermal power plants are often located near water bodies and companies rely on these resources for the success of their business. Water usage and risk exposure will depend on the power generation source and cooling technology used by the power plant, as well as the location of the plant. Even fuels not typically associated with large water use can be water intensive. For example, depending on the cooling technology used, water withdrawals and consumption for Concentrated Solar Power can be of the same order as conventional power plants, while carbon capture and storage can almost double a plant's water withdrawals and consumption¹⁰. Furthermore, power generation plants face reputational risk from the impact that their activities can have on local water resources. For example, in many regions regulations dictate that plants must discharge water at the same or similar temperatures as those at which they withdrew it. Reservoirs and dams can also affect aquatic life and the hydrologic cycle.

Cross-sector average	Power Generation sector performance
 Transparency 51%	41%
 Governance & Strategy 40%	50%
 Measuring & Monitoring 59%	71%
 Risk Assessment 62%	68%
 Targets & Goals 29%	43%
 Value Chain Engagement 40%	41%

Along with the Fossil Fuels sector, disclosure is lacking, with over half of requested companies failing to respond. Major non-responders include **NextEra Energy, Inc.**, **The Southern Company**, and **Xcel Energy Inc.**

It is reassuring that the Power Generation sector performs well on measuring and monitoring, given the sector's dependence on a stable supply of water. Robust monitoring allows companies to plan for the future. For example, **EDP** reports that its water discharges were much lower in 2017 than in 2016 due to severe drought in the Iberian Peninsula which caused a 47% decrease in hydro power generation. As hydro power generation accounts for more than 99% of EDP's discharges to fresh surface water, the company expects this downward trend in discharges to continue as it grows wind capacity in its generation portfolio.

The Power Generation sector tops the table when it comes to setting water targets and goals. For example, by 2020, **Endesa** aims to reduce water consumed per GWh by 30% from a 2010 baseline, and **ENGIE** aims to reduce fresh water withdrawals for energy production by 15% by 2020. Investors must encourage others in the sector to set ambitious goals.

10. <https://www.americanscientist.org/article/energy-water-nexus-head-on-collision-or-near-miss>



RETAIL

Response rate

	Retail	24%	28/117
Clothing Retail		24%	7/29
Department Stores	25%	1/4	
Specialist Retailers		18%	3/17
Supermarkets, Food & Drugstores		25%	17/67

How is water material to the Retail sector?

The Retail sector covers clothing, food and drug retail – a sector with a unique position to effect change in farming, production, manufacturing, and consumer behavior. While water use in direct operations may be limited to taps and toilets in stores, the production of food, textiles and pharmaceuticals in the value chain is water intensive and carries significant water pollution risks. The Retail sector enables agribusinesses to pump ever increasing amounts of non-renewable groundwater, it enables dyehouses to release toxic pollution, and it enables consumers to buy ever cheaper meat, but it can also be the key to changing all of this. Furthermore, retail locations and consumers themselves may be affected by drought or flood events, impacting on sales and business continuity.

Major responding retailers include **Gap Inc.**, which made the Water Security A List, **J Sainsbury plc** and **Inditex**. Transparency in this sector is low, but from the companies that did respond, we found that the most common water risks related to:

- ▼ Increased operating costs
- ▼ Reduction or disruption in production capacity
- ▼ Supply chain disruption
- ▼ Disruption to sales
- ▼ Reduced revenues from lower sales/output
- ▼ Company brand damage

The majority of these risks are expected to materialize within the next three years. For example, **Inditex** reported a potential financial impact of US\$288 million from the reputational risk associated with water pollution from viscose production.

Further, just thirteen retailers reported US\$291 million in water-related financial impacts over the reporting year. These impacts include increased capital costs, increased operating costs and reduced production capacity. For example, **J Sainsbury plc** reports that higher water prices directly impact their operational costs. Ofwat, the UK water regulator, sets price limits for customers that use less than 50 megaliters per annum but as a large water user, Sainsbury's is not subject to such price limits. In response, the company is investing US\$319,000 in reducing water consumption across its estate, by developing on-site rainwater harvesting and increasing water efficiency.



Cross-sector average	Retail sector performance
 Transparency 51%	24%
 Governance & Strategy 40%	32%
 Measuring & Monitoring 59%	18%
 Risk Assessment 62%	32%
 Targets & Goals 29%	25%
 Value Chain Engagement 40%	54%

Retail has the lowest disclosure rate of any sector, outstripping Fossil Fuels which has been the least transparent sector since CDP's Water Security program was launched in 2009. Major non-disclosing companies include **Costco Wholesale Corporation**, **Walgreens Boots Alliance**, and **TJX Companies, In.** Investors should expect greater transparency from retailers given the high dependence on water in the value chain.

Retailers perform poorly when it comes to governance and strategy, second only to Hospitality, the worst performing sector. Companies in this sector are not treating water with the strategic importance it deserves, with just 36% of companies publishing a water policy and 50% integrating water issues into their financial planning. Investors should engage companies to raise the strategic importance of water among retail companies.

The sector is a clear laggard when it comes to measuring and monitoring, the worst of any sector. Direct water use among retailers can be low at individual sites, but when aggregated across the whole estate, retailers can be significant water users. As the majority of water use is embedded in the value chain, companies should also ensure that their suppliers have robust measuring and monitoring systems in place.

Retailers are not undertaking comprehensive assessments of the risks they may face, with the sector being the second worst performer on this metric. This should be a cause for investor concern, given that these companies rely on products from around the world, often from water-stressed areas.

Of the companies setting targets and goals in this sector, only 7% were related to supplier engagement. Given the importance of supplier engagement to this sector this is disappointing.

The Retail sector outperforms the cross-sector average, which is encouraging given that the majority of water-related impacts lie in the value chain, with consumers and suppliers. Investors must encourage all retailers to fully engage their value chain to build awareness of and resilience to water issues that could, if not properly managed, cause disruptions to business continuity.



Appendices



APPENDIX I: REPORT METHODOLOGY

Overview

In 2018, 4,969 companies were asked to provide data about their efforts to manage and govern freshwater resources through CDP. In total 2,114 companies responded, up from 1,432 in 2016.

1,536 of these were asked by their investors, while 3,837 were asked by their purchasing companies as part of CDP's Supply Chain program. The 783 companies responding to the investor request are the focus of this report.

Sectors

For the purposes of this report, respondents to CDP's 2018 water security questionnaire are divided into eleven sectors, defined by CDP's new Activity Classification System, which categorizes companies by the diverse activities from which they derive revenue, and associates these activities with how they impact on water security.

Response rates are based on responses received from companies that were sent CDP's 2018 water questionnaire. Companies that responded voluntarily, and subsidiary companies that respond through their parent companies are included in these calculations.

Metrics included in Global Insights and Analysis pp.11-16

Water withdrawals

To analyze trends in corporate water withdrawals, we examined 296 companies that have consistently reported water information through CDP between 2015 and 2018.

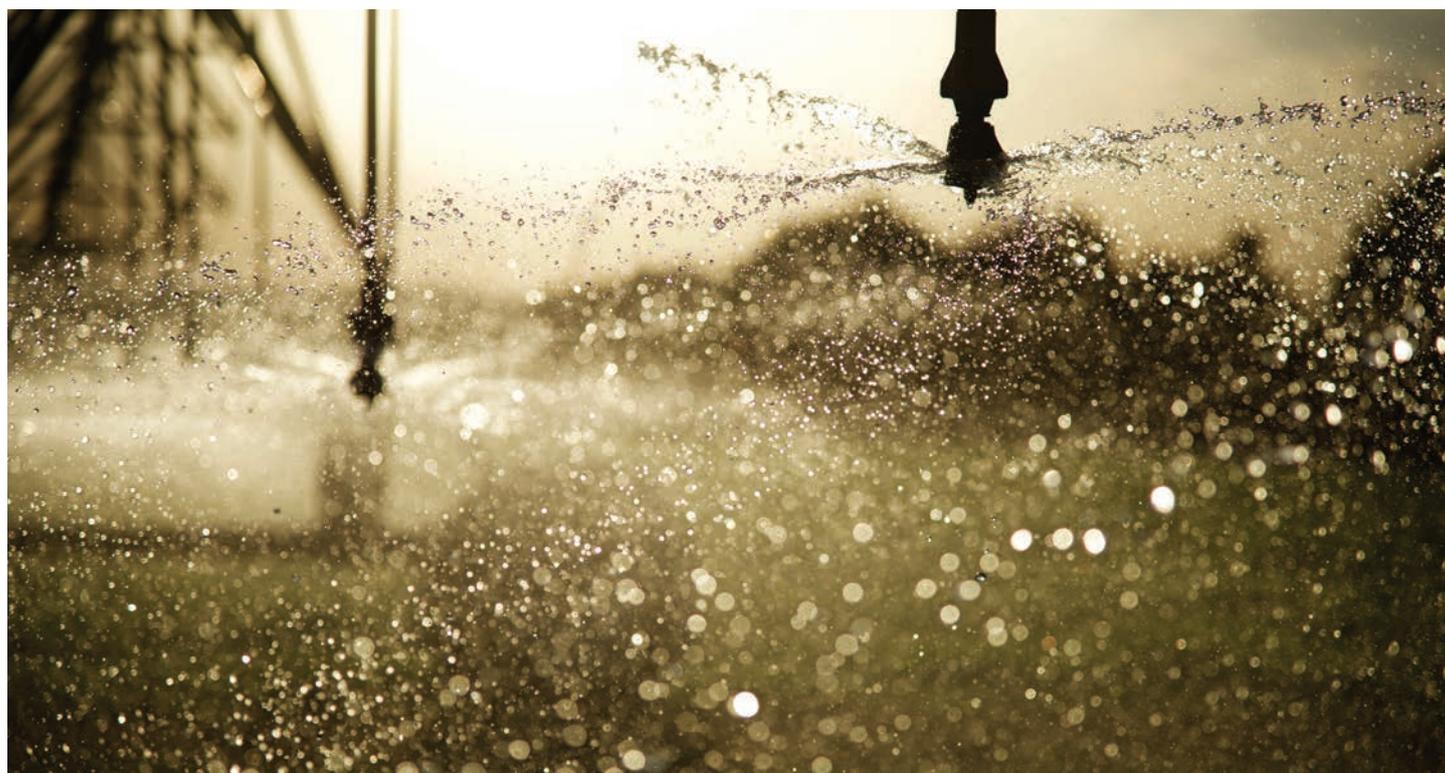
Question W1.2 was analyzed: For the reporting year, please provide total water withdrawal data by source, across your operations, specifically the column within the question that asks: "How does total water withdrawals for this source compare to the last reporting year?". Responses here help us to understand whether withdrawals were "higher" or "lower" than the previous reporting year.

To ensure that this statistic is robust, volumetric data (i.e. megaliters of water withdrawn) was not used due to the potential for the misreporting of absolute volumes (for example, if a company mistakenly reports in different units, or adds an extra zero).

Incentives

In 2018, we introduced a question on water performance incentives for the C-Suite in five high impact sectors: food, beverage and tobacco, metals and mining, oil and gas, electric utilities and chemicals. *W6.4 Do you provide incentives to C-suite employees or board members for the management of water-related issues?*

A total of 297 companies were presented with this question. The figures for risk exposure (77%), board-level oversight (93%) and incentives for water withdrawal reduction (31%) refer to this cohort of 297 companies.



Six key metrics analyzed in Sector summaries pp.16-32

Key metric	Description	Questions analyzed from CDP's 2018 Water Security Questionnaire
 Transparency	Does the company respond to the investor request for water-related information?	Company performs on this metric if they have provided water-related information to their investors via CDP. Both public and non-public responses are counted, as well as voluntary and
 Governance & Strategy	Does the company: <ul style="list-style-type: none"> ▾ have board-level oversight of water issues; ▾ integrate water into long-term business objectives and ▾ have a publicly available water policy? 	Company performs on this metric if they have answered 'yes' to: <p>W6.2 <i>Is there board level oversight of water-related issues within your organization?</i></p> <p>AND</p> <p>W7.1 <i>Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?</i></p> <p>AND</p> <p>W6.1 <i>Does your organization have a water policy?</i></p>
 Measuring & Monitoring	Does the company measure all water aspects at 75% of their facilities?	Company performs on this metric if they answer that they monitor the following at 75% of their facilities or more: <ul style="list-style-type: none"> ▾ total withdrawal volumes ▾ total discharge volumes ▾ quality of water withdrawals discharges; ▾ quality of water discharges; ▾ total water consumption; ▾ the provision of fully-functioning, safely managed Water, Sanitation and Hygiene (WASH) services to all workers. <p>This data is found in question W1.2 <i>Across all your operations, what proportion of the following water aspects are regularly measured and monitored?</i></p>
 Risk Assessment	Does the company conduct a regular risk assessment including river basin management authorities?	Company performs on this metric if they answer 'yes' to: <p>W3.3 <i>Does your organization undertake a water-related risk assessment?</i></p> <p>and</p> <p>if any of the following are selected in W3.3a</p> <ul style="list-style-type: none"> ▾ Six-monthly or more frequently ▾ Annually ▾ Every two years <p>and</p> <p>selects 'river basin management authorities' in W3.3c <i>Which of the following stakeholders are considered in your organization's water-related risk assessments?</i></p>
 Targets & Goals	Does the company set company-wide targets and/or goals that are monitored at the corporate level and targets and goals for any two of the following levels: business activity, site/facility, brand, country, or river basin.	Company performs on this metric if they answer in W8.1 <i>Describe your approach to setting and monitoring water-related targets and/or goals, that they set targets and/or goals that are monitored at the corporate level</i> and sets targets and goals for any two of the following levels: business activity, site/facility, brand, country, or river basin.
 Value chain engagement	Does the company actively engage their value chain (suppliers, customers or other value chain partners) on water-related issues?	Company performs on this metric if in W1.4b <i>Provide details of any other water-related supplier engagement activity</i> , they select any of: <ul style="list-style-type: none"> ▾ Onboarding & compliance ▾ Incentivizing for improved water management and stewardship ▾ Innovation & collaboration ▾ Other

APPENDIX II: KEY INDICATORS BY SECTOR

Sector KPIs	Apparel	Biotech, Health Care & Pharma	Food, Beverage & Agriculture	Fossil Fuels
Disclosure				
CDP Investor Program				
Total companies responding to investor request for water information	13	64	94	43
Total companies requested for water information by investors	26	104	163	138
Response rate	50%	62%	58%	31%
Public responses	7	51	66	29
Private responses	6	13	28	14
CDP Supply Chain Program				
Total companies responding to customer request for water information	2	18	42	11
Total companies requested for water information by customers	2	21	50	23
Water dependence				
Respondents reporting that sufficient amounts of good quality freshwater available for use is 'vital' or 'important' for their direct operations	62%	95%	97%	71%
Respondents reporting that sufficient amounts of good quality freshwater available for use is 'vital' or 'important' for their indirect operations	69%	84%	93%	43%
Water accounting				
Respondents that monitor total water withdrawal volumes at more than 75% of facilities	54%	84%	96%	79%
Respondents that monitor total water consumption volumes at more than 75% of facilities	31%	76%	88%	74%
Respondents that monitor total water discharge volumes at more than 75% of facilities	46%	79%	89%	71%
Respondents that monitor water recycling/reuse at more than 75% of facilities	8%	37%	44%	52%
Respondents reporting withdrawals from water-stressed areas	23%	60%	74%	50%
Value chain engagement				
Respondents engaging their value chain on water-related issues	55%	47%	53%	21%
Business impacts				
Respondents that have experienced detrimental water-related business impacts in the reporting year	23%	19%	39%	31%
Total financial value of impacts (USD)	\$300,020	\$3,523,488,748	\$99,687,163	\$344,040,635
Respondents subject to penalties, fines and/or enforcement orders	0%	8%	29%	24%
Total value of reported penalties, fines and/or enforcement orders	\$-	\$8,389	\$3,850,238	\$6,881,301
Water risk assessment				
Respondents that undertake a water-related risk assessment	85%	90%	89%	86%
Respondents that undertake a water risk assessment with a specified frequency	77%	84%	81%	74%
Respondents that factor water availability at a basin/catchment level into water risk assessments	100%	89%	96%	94%
Respondents that factor water quality at a basin/catchment level into water risk assessments	90%	83%	91%	91%
Respondents that factor stakeholder conflicts concerning water resources at a basin/catchment level into water risk assessments	70%	69%	89%	88%
Respondents that factor implications of water on key commodities/raw materials into water risk assessments	90%	80%	84%	70%
Respondents that factor water-related regulatory frameworks into water risk assessments	100%	94%	92%	100%
Respondents that factor status of ecosystems and habitats into water risk assessments	60%	72%	75%	94%
Respondents that factor access to fully-functioning, safely managed WASH services for all employees into water risk assessments	90%	85%	72%	76%
Respondents that factor customers into water risk assessments	70%	85%	80%	67%
Respondents that factor employees into water risk assessments	90%	91%	82%	88%

Hospitality	Infrastructure	Manufacturing	Materials	Mineral Extraction	Power Generation	Retail	Services	Transportation Services	Total
17	44	304	60	32	29	28	47	8	783
34	107	503	123	65	70	117	69	16	1535
50%	41%	60%	49%	49%	41%	24%	68%	50%	51%
12	30	229	45	28	26	19	34	6	582
5	14	75	15	4	3	9	13	2	201
5	18	221	29	3	8	2	28	2	389
7	23	268	43	3	10	5	25	2	482
94%	86%	83%	93%	75%	100%	57%	65%	75%	84%
88%	60%	70%	79%	53%	50%	64%	59%	63%	70%
88%	83%	89%	97%	100%	100%	50%	61%	75%	86%
63%	71%	75%	90%	97%	100%	36%	46%	88%	75%
63%	74%	75%	91%	97%	96%	46%	50%	63%	76%
25%	39%	48%	57%	88%	64%	18%	22%	25%	45%
50%	38%	62%	59%	63%	39%	46%	39%	38%	57%
50%	29%	39%	42%	23%	41%	54%	38%	0%	40%
56%	33%	19%	26%	44%	25%	39%	24%	25%	26%
\$26,929,117	\$1,650,458,236	\$1,636,791,310	\$294,880,413	\$20,582,925,447	\$9,857,418,888	\$291,369,678	\$218,658,883	\$7,060,000	\$38,534,008,539
13%	29%	12%	21%	22%	25%	14%	0%	25%	16%
\$6,720	\$6,985,941	\$2,508,932	\$1,084,165	\$6,331,176	\$38,892	\$138,976	\$-	\$80,144,200	\$107,978,932
88%	93%	90%	97%	100%	93%	64%	80%	75%	89%
63%	83%	83%	90%	94%	93%	50%	76%	75%	82%
100%	97%	94%	96%	100%	96%	94%	86%	100%	94%
100%	92%	89%	95%	94%	100%	82%	83%	100%	90%
46%	86%	77%	89%	94%	96%	65%	83%	83%	81%
69%	72%	73%	86%	74%	84%	76%	81%	67%	77%
77%	94%	92%	100%	94%	100%	88%	94%	100%	94%
62%	94%	76%	84%	100%	100%	65%	75%	100%	80%
69%	81%	86%	89%	90%	76%	65%	94%	83%	83%
92%	89%	84%	82%	39%	92%	82%	81%	100%	81%
92%	91%	90%	93%	97%	96%	76%	94%	83%	90%

APPENDIX II: KEY INDICATORS BY SECTOR

Sector KPIs	Apparel	Biotech, Health Care & Pharma	Food, Beverage & Agriculture	Fossil Fuels
Respondents that factor investors into water risk assessments	80%	87%	86%	91%
Respondents that factor local communities into water risk assessments	100%	94%	86%	100%
Respondents that factor NGO's into water risk assessments	70%	72%	76%	82%
Respondents that factor other water users at a basin/catchment level into water risk assessments	80%	69%	81%	91%
Respondents that factor regulators into water risk assessments	90%	93%	91%	100%
Respondents that factor river basin management authorities into water risk assessments	90%	70%	77%	88%
Respondents that factor statutory special interest groups at a local level into water risk assessments	60%	57%	65%	82%
Respondents that factor suppliers into water risk assessments	80%	83%	81%	79%
Respondents that factor water utilities at a local level into water risk assessments	90%	78%	78%	79%
Water risks				
Respondents exposed to substantive water risk either direct operations or along the value chain	54%	56%	81%	69%
Respondents exposed to substantive water risk in direct operations only	15%	21%	30%	45%
Respondents exposed to substantive water risk in the value chain only	15%	0%	3%	2%
Percentage of risks that are physical	82%	76%	86%	69%
Percentage of risks that are regulatory	18%	16%	9%	25%
Percentage of risks that are reputational	0%	7%	5%	6%
Percentage of risks that are technological	0%	1%	0%	0%
Respondents reporting >50% of facilities at risk	8%	18%	11%	26%
Water opportunities				
Respondents that identify and are realizing water-related opportunities	69%	71%	76%	69%
Percentage of water opportunities relating to water efficiency	39%	47%	44%	53%
Percentage of water opportunities relating to resilience	26%	23%	19%	8%
Percentage of water opportunities relating to products and services	22%	18%	12%	9%
Percentage of water opportunities relating to markets	9%	8%	16%	19%
Governance & strategy				
Respondents with a documented water policy that is publicly available	62%	71%	69%	55%
Respondents with board-level oversight of water issues	85%	76%	91%	90%
Respondents that integrate water-related issues into long-term business objectives	62%	66%	72%	67%
Respondents that integrate water-related issues into their strategy for achieving long-term objectives	62%	66%	71%	64%
Respondents that integrate water-related issues into financial planning	46%	52%	62%	62%
Respondents whose water-related CAPEX increased in the reporting year	27%	27%	33%	24%
Respondents whose water-related OPEX increased in the reporting year	36%	34%	34%	21%
Respondents using climate-related scenario analysis to inform business strategy	45%	37%	45%	61%
Respondents identifying water-related outcomes from climate scenario analysis	27%	15%	38%	29%
Respondents using an internal price on water	9%	12%	15%	29%
Targets & goals				
Respondents with targets and goals that are monitored at the corporate level	54%	52%	56%	45%
Respondents setting water intensity reduction targets	36%	4%	27%	16%
Respondents setting supplier engagement targets	0%	2%	1%	0%
Respondents setting Water, Sanitation & Hygiene (WASH) targets	0%	0%	8%	0%
Linkages & trade-offs				
Respondents that have identified any linkages or trade-offs between water and other environmental impacts	82%	75%	87%	79%

Global Market Performance Analysis - Q3 2023									
Regional Performance					Sectoral Performance				
North America	Europe	Asia-Pacific	Latin America	Middle East	Energy	Technology	Healthcare	Financials	Consumer Goods
Hospitality	Infrastructure	Manufacturing	Materials	Mineral Extraction	Power Generation	Retail	Services	Transportation Services	Total
85%	83%	75%	89%	97%	96%	88%	78%	83%	82%
69%	94%	89%	91%	100%	100%	82%	89%	100%	91%
77%	86%	68%	80%	90%	92%	65%	72%	100%	75%
69%	74%	69%	82%	94%	84%	65%	69%	83%	75%
77%	94%	91%	98%	100%	100%	94%	83%	100%	93%
38%	86%	75%	88%	81%	76%	53%	61%	83%	76%
46%	71%	59%	75%	87%	80%	35%	44%	67%	63%
77%	77%	76%	80%	52%	72%	82%	75%	67%	77%
69%	77%	83%	73%	81%	92%	65%	72%	83%	80%
Regional Performance Summary - Q3 2023									
56%	73%	61%	76%	91%	86%	57%	50%	50%	66%
13%	36%	26%	26%	53%	43%	11%	28%	13%	28%
6%	2%	2%	0%	0%	0%	21%	0%	0%	3%
97%	72%	77%	73%	78%	64%	79%	67%	56%	76%
3%	20%	18%	22%	14%	30%	14%	13%	22%	17%
0%	8%	5%	5%	8%	5%	7%	18%	22%	6%
0%	0%	0%	1%	0%	0%	0%	1%	0%	0%
19%	19%	11%	22%	66%	32%	18%	24%	38%	18%
Sectoral Performance Summary - Q3 2023									
63%	81%	69%	78%	78%	89%	61%	74%	75%	72%
39%	25%	35%	44%	46%	45%	38%	23%	41%	39%
17%	12%	8%	9%	11%	4%	18%	12%	18%	12%
9%	32%	38%	23%	4%	18%	20%	43%	18%	25%
26%	18%	14%	16%	32%	20%	23%	20%	24%	17%
Global Market Performance Summary - Q3 2023									
63%	76%	69%	67%	50%	68%	36%	67%	88%	66%
94%	88%	84%	86%	97%	100%	71%	80%	88%	86%
56%	76%	58%	84%	94%	86%	50%	50%	63%	66%
56%	74%	59%	84%	84%	86%	50%	50%	50%	65%
44%	64%	48%	69%	88%	82%	50%	54%	50%	57%
29%	24%	30%	42%	29%	26%	21%	26%	38%	30%
50%	21%	33%	42%	35%	19%	25%	38%	50%	33%
29%	63%	40%	54%	39%	74%	29%	43%	50%	45%
21%	47%	25%	37%	35%	37%	17%	31%	13%	29%
0%	8%	13%	14%	6%	11%	4%	5%	13%	13%
Regional Performance Summary - Q4 2023									
50%	45%	46%	53%	47%	68%	43%	46%	50%	49%
9%	4%	12%	13%	5%	17%	13%	3%	14%	13%
0%	4%	1%	0%	0%	4%	7%	0%	0%	1%
0%	0%	2%	2%	0%	4%	0%	3%	0%	2%
Global Market Performance Summary - Q4 2023									
86%	87%	70%	75%	90%	93%	67%	62%	50%	76%

APPENDIX III: KEY INDICATORS BY GEOGRAPHY

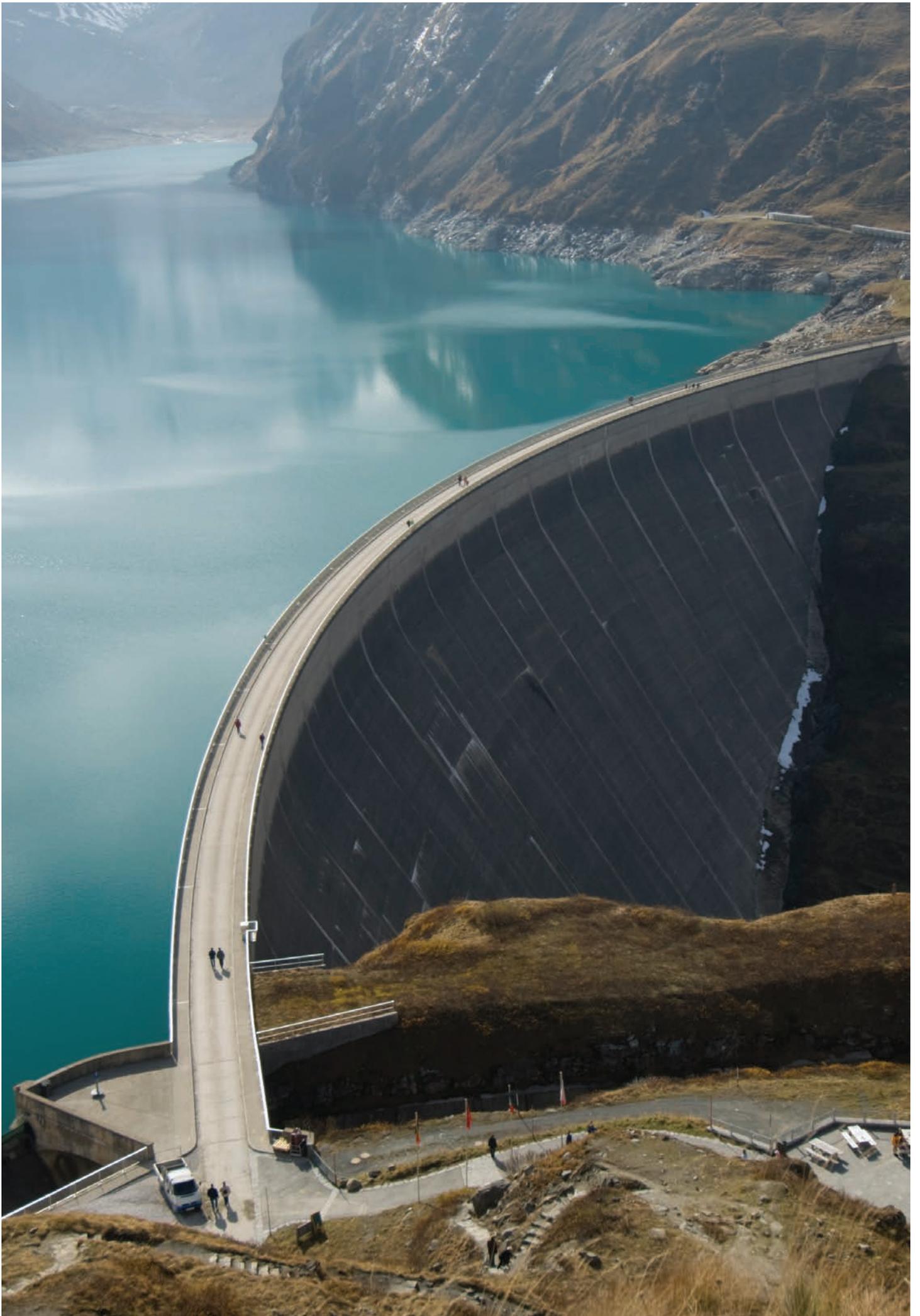
Geographic KPIs	Australia	Brazil
Disclosure		
CDP Investor Program		
Total companies responding to investor request for water information	18	19
Total companies requested for water information by investors	48	27
Response rate	38%	70%
Public responses	15	9
Private responses	3	10
CDP Supply Chain Program		
Total companies responding to customer request for water information	5	158
Water dependence		
Respondents reporting that sufficient amounts of good quality freshwater available for use is 'vital' or 'important' for their direct operations	89%	89%
Respondents reporting that sufficient amounts of good quality freshwater available for use is 'vital' or 'important' for their indirect operations	72%	83%
Water accounting		
Respondents that monitor total water withdrawal volumes at more than 75% of facilities	94%	89%
Respondents that monitor total water consumption volumes at more than 75% of facilities	83%	72%
Respondents that monitor total water discharge volumes at more than 75% of facilities	83%	78%
Respondents that monitor water recycling/reuse at more than 75% of facilities	56%	67%
Respondents reporting withdrawals from water-stressed areas	61%	67%
Value chain engagement		
Respondents engaging their value chain on water-related issues	18%	27%
Business impacts		
Respondents that have experienced detrimental water-related business impacts in the reporting year	28%	39%
Total financial value of impacts (USD)	\$7,202,372	\$20,261,242,173
Respondents subject to penalties, fines and/or enforcement orders	28%	39%
Total value of reported penalties, fines and/or enforcement orders	\$830,657	\$4,865,391
Water risk assessment		
Respondents that undertake a water-related risk assessment	89%	83%
Respondents that undertake a water risk assessment with a specified frequency	82%	100%
Respondents that factor water availability at a basin/catchment level into water risk assessments	100%	100%
Respondents that factor water quality at a basin/catchment level into water risk assessments	100%	100%
Respondents that factor stakeholder conflicts concerning water resources at a basin/catchment level into water risk assessments	87%	100%
Respondents that factor implications of water on your key commodities/raw materials into water risk assessments	93%	85%
Respondents that factor water-related regulatory frameworks into water risk assessments	100%	100%
Respondents that factor status of ecosystems and habitats into water risk assessments	80%	92%
Respondents that factor access to fully-functioning, safely managed WASH services for all employees into water risk assessments	93%	92%
Respondents that factor customers into water risk assessments	67%	92%
Respondents that factor employees into water risk assessments	93%	92%
Respondents that factor investors into water risk assessments	80%	92%

Canada	France	Germany	Japan	South Africa	Turkey	United Kingdom	United States
24	23	29	198	43	26	42	187
55	38	40	328	60	62	68	332
44%	61%	73%	60%	72%	42%	62%	56%
15	18	20	138	40	19	36	142
9	5	6	60	3	7	6	45
26	41	104	295	9	4	55	360
78%	74%	73%	84%	90%	88%	81%	85%
52%	65%	62%	77%	86%	65%	62%	72%
83%	78%	92%	86%	86%	96%	83%	82%
65%	74%	85%	77%	74%	88%	64%	68%
74%	78%	85%	75%	74%	88%	69%	70%
65%	48%	46%	45%	43%	46%	31%	36%
57%	48%	62%	63%	52%	77%	50%	55%
18%	55%	52%	35%	33%	46%	46%	49%
26%	35%	12%	17%	69%	31%	31%	30%
\$51,116,497	\$3,459,185,525	\$2,159,631	\$10,815,836,814	\$140,531,478	\$25,786,802	\$525,652,906	\$2,451,955,328
26%	35%	12%	17%	69%	31%	31%	30%
\$6,271,811	\$2,558,849	\$763,008	\$67,684	\$206,749	\$881,325	\$374,835	\$82,775,939
91%	91%	96%	84%	98%	96%	88%	88%
82%	86%	92%	79%	103%	96%	87%	82%
95%	100%	96%	92%	95%	100%	94%	92%
95%	90%	92%	88%	90%	96%	97%	85%
75%	90%	79%	78%	82%	84%	80%	79%
55%	95%	71%	80%	79%	60%	86%	74%
90%	95%	96%	93%	85%	100%	94%	94%
90%	90%	88%	79%	69%	80%	83%	76%
75%	70%	75%	87%	90%	96%	83%	81%
50%	90%	83%	86%	67%	84%	71%	83%
85%	95%	92%	90%	85%	96%	97%	90%
85%	85%	83%	78%	92%	92%	85%	81%

APPENDIX III: KEY INDICATORS BY GEOGRAPHY

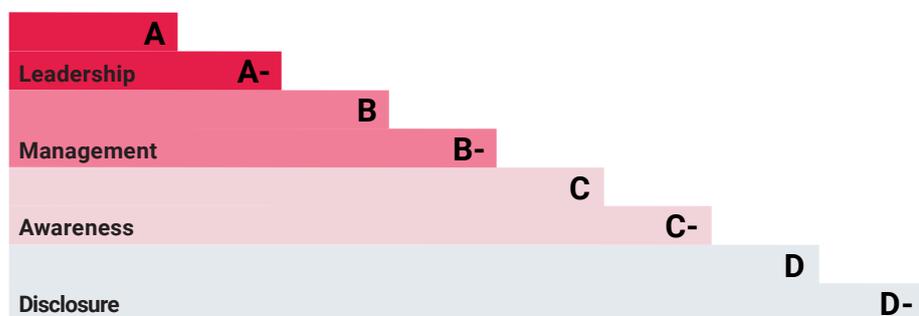
Geographic KPIs	Australia	Brazil
Respondents that factor local communities into water risk assessments	100%	100%
Respondents that factor NGO's into water risk assessments	73%	92%
Respondents that factor other water users at a basin/catchment level into water risk assessments	87%	92%
Respondents that factor regulators into water risk assessments	93%	92%
Respondents that factor river basin management authorities into water risk assessments	60%	100%
Respondents that factor statutory special interest groups at a local level into water risk assessments	80%	85%
Respondents that factor suppliers into water risk assessments	73%	85%
Respondents that factor water utilities at a local level into water risk assessments	87%	85%
Water risks		
Respondents exposed to substantive water risk either direct operations or along the value chain	50%	89%
Respondents exposed to substantive water risk in direct operations only	33%	22%
Respondents exposed to substantive water risk in the value chain only	6%	6%
Percentage of risks that are physical	83%	72%
Percentage of risks that are regulatory	11%	22%
Percentage of risks that are reputational	6%	5%
Percentage of risks that are technological	0%	1%
Respondents reporting >50% of facilities at risk	28%	17%
Water opportunities		
Respondents that identify and are realizing water-related opportunities	39%	78%
Percentage of water opportunities relating to water efficiency	29%	39%
Percentage of water opportunities relating to resilience	0%	18%
Percentage of water opportunities relating to products and services	29%	15%
Percentage of water opportunities relating to markets	29%	15%
Governance & strategy		
Respondents with a documented water policy that is publicly available	50%	50%
Respondents with board-level oversight of water issues	94%	78%
Respondents that integrate water-related issues into long-term business objectives	56%	72%
Respondents that integrate water-related issues into their strategy for achieving long-term objectives	44%	72%
Respondents that integrate water-related issues into financial planning	50%	67%
Respondents whose water-related CAPEX increased in the reporting year	12%	40%
Respondents whose water-related OPEX increased in the reporting year	18%	40%
Respondents using climate-related scenario analysis to inform business strategy	24%	53%
Respondents identifying water-related outcomes from climate scenario analysis	6%	33%
Respondents using an internal price on water	6%	27%
Targets & goals		
Respondents with targets and goals that are monitored at the corporate level	17%	50%
Respondents setting water intensity reduction targets	27%	7%
Respondents setting supplier engagement targets	0%	0%
Respondents setting Water, Sanitation & Hygiene (WASH) targets	0%	0%
Linkages & trade-offs		
Respondents that have identified any linkages or trade-offs between water and other environmental impacts	65%	67%

Canada	France	Germany	Japan	South Africa	Turkey	United Kingdom	United States
95%	85%	100%	92%	85%	92%	88%	89%
80%	85%	83%	65%	69%	80%	74%	76%
100%	90%	67%	82%	69%	76%	74%	68%
100%	95%	92%	94%	92%	88%	94%	90%
85%	85%	92%	81%	72%	60%	74%	67%
75%	75%	83%	55%	59%	40%	62%	63%
45%	90%	88%	81%	69%	64%	74%	77%
70%	80%	75%	82%	82%	68%	82%	83%
61%	70%	46%	66%	90%	88%	62%	58%
39%	22%	19%	28%	45%	42%	21%	24%
4%	9%	8%	2%	0%	0%	0%	3%
58%	89%	100%	81%	76%	77%	64%	68%
33%	5%	0%	12%	16%	14%	27%	28%
8%	5%	0%	7%	8%	9%	9%	4%
0%	0%	0%	0%	0%	0%	0%	0%
35%	0%	4%	13%	45%	62%	17%	9%
65%	74%	65%	67%	90%	92%	76%	73%
51%	34%	26%	29%	49%	41%	40%	40%
5%	6%	12%	4%	17%	11%	25%	14%
8%	38%	44%	48%	12%	17%	19%	20%
30%	17%	15%	16%	18%	31%	11%	12%
35%	61%	58%	73%	48%	77%	57%	68%
96%	91%	96%	81%	98%	96%	90%	80%
78%	74%	65%	53%	86%	81%	57%	66%
70%	78%	69%	52%	83%	85%	64%	65%
70%	65%	62%	41%	86%	73%	55%	56%
14%	32%	12%	25%	64%	38%	31%	23%
9%	41%	28%	33%	49%	42%	23%	30%
45%	59%	56%	40%	26%	73%	44%	42%
23%	41%	20%	29%	26%	69%	31%	22%
23%	14%	16%	10%	10%	12%	3%	9%
35%	57%	62%	43%	43%	77%	52%	48%
6%	16%	3%	4%	7%	21%	8%	8%
0%	3%	10%	0%	0%	0%	0%	2%
0%	0%	0%	0%	0%	2%	4%	2%
64%	82%	80%	69%	90%	88%	82%	70%



APPENDIX IV: LIST OF COMPANY RESPONSE STATUS AND SCORES

CDP's scoring methodology builds on four levels, from Disclosure to Leadership. A threshold of 80% in a lower level has to be passed before a company is scored for the next level. For more information, please see our [Introduction to Scoring](#).



F: Failure to provide sufficient information to CDP to be evaluated for this purpose

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Apparel				
adidas AG	Submitted	ADS GR	Germany	B-
Asics Corporation	Submitted	7936 JP	Japan	Not scored
Burberry Group	Submitted	BRBY LN	United Kingdom of Great Britain and Northern Ireland	B
Christian Dior	Not submitted	CDI FP	France	F
Citizen Watch Co.,Ltd.	Submitted	7762 JP	Japan	B-
Compagnie Financière Richemont SA	Not submitted	CFR SW	Switzerland	F
Eclat Textile Co Ltd	Submitted	1476 TT	Taiwan ROC	D
Feng Tay Enterprises Co Ltd	Not submitted	9910 TT	Taiwan ROC	F
Gildan Activewear Inc.	Not submitted	GIL CN	Canada	F
Hanesbrands Inc.	Submitted	HBI US	United States of America	B-
Hermes International	Not submitted	RMS FP	France	F
Kering	Submitted	KER FP	France	B
LVMH	Not submitted	MC FP	France	F
NIKE Inc.	Submitted	NKE US	United States of America	Not scored
Pou Chen Corp.	Not submitted	9904 TT	Taiwan ROC	F
PVH Corp	Submitted	PVH US	United States of America	B
Shenzhou International Group Holdings Ltd	Not submitted	2313 HK	China	F
Swatch Group	Not submitted	UHRN SW	Switzerland	F
Toyobo Co., Ltd.	Submitted	3101 JP	Japan	Not available
Under Armour Inc	Submitted	UA US	United States of America	Not scored
VF Corporation	Submitted	VFC US	United States of America	B-
Yue Yuen Industrial	Not submitted	551 HK	China, Hong Kong Special Administrative Region	F
YÜNSA YÜNLÜ SANAYİ VE TİCARET A.Ş.	Submitted	YUNSA TI	Turkey	B-
Biotech, Health Care & Pharma				
Abbott Laboratories	Submitted	ABT US	United States of America	B-
AbbVie Inc	Submitted	ABBV US	United States of America	B
Alexion Pharmaceuticals	Not submitted	ALXN US	United States of America	F
Allergan plc	Submitted	AGN UN	United States of America	C
Amgen, Inc.	Submitted	AMGN US	United States of America	C
Anthem Inc	Submitted	ANTM US	United States of America	C
Aspen Pharmacare Holdings	Submitted	APN SJ	South Africa	B-
Astellas Pharma Inc.	Submitted	4503 JP	Japan	B-

APPENDIX IV: LIST OF COMPANY RESPONSE STATUS AND SCORES

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
AstraZeneca	Submitted	AZN LN	United Kingdom of Great Britain and Northern Ireland	A
Baxter International Inc.	Submitted	BAX US	United States of America	B
Bayer AG	Submitted	BAYN GR	Germany	A
Becton, Dickinson and Co.	Submitted	BDX US	United States of America	B
Biogen Inc.	Submitted	BIIB US	United States of America	B
Bristol-Myers Squibb	Submitted	BMY US	United States of America	B-
Celgene Corporation	Submitted	CELG US	United States of America	C
Chugai Pharmaceutical Co., Ltd.	Submitted	4519 JP	Japan	C
CSL	Submitted	CSL AU	Australia	B-
CVS Health	Submitted	CVS US	United States of America	B
Daiichi Sankyo Co., Ltd.	Submitted	4568 JP	Japan	B-
Dr. Reddy's Laboratories	Submitted	DRRD IN	India	B-
Edwards Lifesciences Corp	Submitted	EW US	United States of America	C
EİS ECZACIBAŞI İLAÇ, SINAI VE FİNANSAL YATIRIMLAR SANAYİ VE TİCARET A.Ş.	Not submitted	ECILC TI	Turkey	F
Eisai Co., Ltd.	Not submitted	4523 JP	Japan	F
Eli Lilly & Co.	Submitted	LLY US	United States of America	B
Endo International plc	Not submitted	ENDP US	United States of America	F
Essilor International	Submitted	EL FP	France	A-
Express Scripts Holding Company	Submitted	ESRX US	United States of America	Not available
Fresenius Medical Care AG & Co. KGaA	Submitted	FME GR	Germany	C
Fresenius SE & Co. KGaA	Submitted	FRE GR	Germany	C
Genmab A/S	Not submitted	GEN DC	Denmark	F
Gilead Sciences, Inc.	Not submitted	GILD US	United States of America	F
GlaxoSmithKline	Submitted	GSK LN	United Kingdom of Great Britain and Northern Ireland	B
GRIFOLS	Not submitted	GRF SM	Spain	F
Hamamatsu Photonics K.K.	Submitted	6965 JP	Japan	C
Hikma Pharmaceuticals	Not submitted	HIK LN	United Kingdom of Great Britain and Northern Ireland	F
Hisamitsu Pharmaceutical Co., Inc.	Not submitted	4530 JP	Japan	F
Hoya Corporation	Not submitted	7741 JP	Japan	F
Hypera SA	Not submitted	HYPE3 BZ	Brazil	F
Ipsen	Submitted	IPN FP	France	B
Johnson & Johnson	Submitted	JNJ US	United States of America	A-
Kaken Pharmaceutical Co., Ltd.	Not submitted	4521 JP	Japan	F
Kissei Pharmaceutical Co., Ltd.	Not submitted	4547 JP	Japan	F
Koninklijke Philips NV	Submitted	PHIA NA	Netherlands	B
KYORIN Holdings, Inc.	Not submitted	4569 JP	Japan	F
Kyowa Hakko Kirin Co., Ltd.	Submitted (see another)	4151 JP	Japan	Kirin Holdings Co Ltd (A)
Life Healthcare Group Holdings Ltd	Submitted	LHC SJ	South Africa	C
Mallinckrodt plc	Not submitted	MNK US	United States of America	F
Mediclinic International	Submitted	MDC LN	South Africa	B
Medtronic PLC	Submitted	MDT UN	United States of America	B-
Merck & Co., Inc.	Submitted	MRK US	United States of America	B-
Mitsubishi Tanabe Pharma Corporation	Submitted (see another)	4508 JP	Japan	Mitsubishi Chemical Holdings Corporation (A-)
Mochida Pharmaceutical Co., Ltd.	Not submitted	4534 JP	Japan	F
Monsanto Company	Not submitted	MON US	United States of America	F
Mylan Inc.	Submitted	MYL US	United States of America	Not available

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Netcare Limited	Submitted	NTC SJ	South Africa	B
Nihon Kohden Corporation	Submitted	6849 JP	Japan	C
Nippon Shinyaku Co., Ltd.	Not submitted	4516 JP	Japan	F
Nipro Corporation	Not submitted	8086 JP	Japan	F
Novartis	Submitted	NOVN SW	Switzerland	B
Novo Nordisk A/S	Submitted	NOVOB DC	Denmark	Not available
Olympus Corporation	Submitted	7733 JP	Japan	B-
Ono Pharmaceutical Co., Ltd.	Submitted	4528 JP	Japan	B
Orion Oyj	Submitted	ORNBV FH	Finland	Not scored
Otsuka Holdings Co., Ltd.	Submitted	4578 JP	Japan	C
PerkinElmer, Inc.	Submitted	PKI US	United States of America	D
Perrigo Co.	Not submitted	PRGO US	United States of America	F
Pfizer Inc.	Submitted	PFE US	United States of America	B
Ramsay Health Care	Not submitted	RHC AU	Australia	F
Regeneron Pharmaceuticals, Inc.	Submitted	REGN US	United States of America	B-
Richter Gedeon Nyrt.	Not submitted	RICHT HB	Hungary	F
Roche Holding AG	Submitted	ROG SW	Switzerland	B
Rohto Pharmaceutical Co., Ltd.	Not submitted	4527 JP	Japan	F
Roper Industries Inc	Not submitted	ROP US	United States of America	F
SANOFI	Submitted	SAN FP	France	B
Santen Pharmaceutical Co., Ltd.	Submitted	4536 JP	Japan	C
Sawai Pharmaceutical Co., Ltd.	Submitted	4555 JP	Japan	C
SHANDONG TOPSCIENCE BIOTECH	Submitted	ADFWNZ CH	China	Not scored
Shimadzu Corporation	Submitted	7701 JP	Japan	C
Shionogi & Co., Ltd.	Submitted	4507 JP	Japan	Not scored
Shire	Submitted	SHP LN	Ireland	B
Smith & Nephew	Submitted	SN/ LN	United Kingdom of Great Britain and Northern Ireland	C
Sumitomo Dainippon Pharma Co., Ltd.	Submitted	4506 JP	Japan	C
Sun Pharmaceutical Industries	Not submitted	SUNP IN	India	F
Sysmex Corporation	Submitted	6869 JP	Japan	C
Taisho Pharmaceutical Co., Ltd.	Not submitted	4581 JP	Japan	F
Takeda Pharmaceutical Company Limited	Submitted	4502 JP	Japan	B
Terumo Corporation	Submitted	4543 JP	Japan	C
Teva Pharmaceutical Industries Ltd	Not submitted	TEVA UN	Israel	F
Thermo Fisher Scientific Inc.	Submitted	TMO US	United States of America	C
Tsumura & Co.	Submitted	4540 JP	Japan	C
UCB SA	Submitted	UCB BB	Belgium	Not scored
Varian Medical Systems Inc	Submitted	VAR US	United States of America	B
Vertex Pharmaceuticals Inc	Not submitted	VRTX US	United States of America	F
Vifor Pharma AG	Not submitted	VIFN SW	Switzerland	F
Zimmer Biomet Holdings, Inc.	Not submitted	ZBH US	United States of America	F
Zoetis Inc	Not submitted	ZTS US	United States of America	F
Food, Beverage & Agriculture				
Ajinomoto Co.Inc.	Submitted	2802 JP	Japan	A-
Alfa SAB de CV	Not submitted	ALFAA MM	Mexico	F
Altria Group, Inc.	Submitted	MO US	United States of America	A
Ambev S.A	Submitted (see another)	ABEV3 BZ	Brazil	Anheuser Busch InBev (A-)
ANADOLU EFES BİRACILIK VE MALT SANAYİİ A.Ş.	Not submitted	AEFES TI	Turkey	F
Anheuser Busch InBev	Submitted	ABI BB	Belgium	A-

APPENDIX IV: LIST OF COMPANY RESPONSE STATUS AND SCORES

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Arca Continental, SAB de CV	Submitted	AC* MM	Mexico	B
Archer Daniels Midland	Submitted	ADM US	United States of America	B-
Ariake Japan	Not submitted	2815 JP	Japan	F
Aryzta AG	Submitted	ARYN SW	Switzerland	Not scored
Asahi Group Holdings, Ltd.	Submitted	2502 JP	Japan	A
Avi Ltd	Not submitted	AVI SJ	South Africa	F
Bajaj Hindusthan Ltd.	Not submitted	BJH IN	India	F
Barry Callebaut AG	Submitted	BARN SW	Switzerland	B-
Bid Corporation Ltd	Not submitted	BID SJ	South Africa	F
BRF S.A	Submitted	BRFS3 BZ	Brazil	C
British American Tobacco	Submitted	BATS LN	United Kingdom of Great Britain and Northern Ireland	B-
Brown-Forman Corporation	Submitted	BF/B US	United States of America	D
Bunge	Submitted	BG US	United States of America	B-
Calbee, Inc.	Not submitted	2229 JP	Japan	F
Campbell Soup Company	Submitted	CPB US	United States of America	B-
Carlsberg Breweries A/S	Submitted	CARLB DC	Denmark	C
Chaoda Modern Agriculture	Not submitted	682 HK	China, Hong Kong Special Administrative Region	F
Charoen Pokphand Foods PCL	Submitted	CPF TB	Thailand	B-
Charoen Pokphand Indonesia	Not submitted	CPIN IJ	Indonesia	F
China Huishan Dairy Holdings Company Ltd	Not submitted	6863 HK	China	F
China Mengniu Dairy Company Limited	Not submitted	2319 HK	China, Hong Kong Special Administrative Region	F
China Resources Beer (Holdings) Company Limited	Not submitted	291 HK	China	F
Chocoladefabriken Lindt & Sprüngli AG	Submitted	LISN SW	Switzerland	C
Chr. Hansen Holding A/S	Not submitted	CHR DC	Denmark	F
Coca-Cola Amatil	Submitted	CCL AU	Australia	Not available
Coca-Cola Bottlers Japan Holdings Inc.	Not submitted	2579 JP	Japan	F
Coca-Cola East Japan Co., Ltd.	Not submitted	2580 JP	Japan	F
Coca-Cola European Partners	Submitted	CCEP US	United Kingdom of Great Britain and Northern Ireland	A
Coca-Cola Femsa Sab-Ser I	Submitted	KOFL MM	Mexico	B
Coca-Cola HBC AG	Submitted	CCH LN	Switzerland	B
COCA-COLA İÇECEK A.Ş.	Submitted	CCOLA TI	Turkey	B-
Conagra Brands Inc	Submitted	CAG US	United States of America	B
Constellation Brands, Inc.	Submitted	STZ US	United States of America	B-
DAESANG CORPORATION	Not submitted	001680 KS	Republic of Korea	F
Dali Foods Group Company Ltd	Not submitted	3799 HK	China	F
Danone	Submitted	BN FP	France	B
Dean Foods Company	Not submitted	DF US	United States of America	F
Diageo Plc	Submitted	DGE LN	United Kingdom of Great Britain and Northern Ireland	A
Distell Group Holdings	Submitted	DGH SJ	South Africa	B-
Dongsuh	Not submitted	026960 KS	Republic of Korea	F
Embotelladora Andina	Submitted	ANDINAA CI	Chile	Not scored
Eurocash S.A.	Not submitted	EUR PW	Poland	F
Ezaki Glico Co., Ltd.	Not submitted	2206 JP	Japan	F
Famous Brands Limited	Not submitted	FBR SJ	South Africa	F
Flowers Foods Inc	Submitted	FLO US	United States of America	C
Foshan Haitian Flavouring and Food	Not submitted	603288 CH	China	F
Fresh Del Monte Produce Inc	Submitted	FDP US	United States of America	C
Fresherized Foods	Submitted	3761956Z US	United States of America	C

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
General Mills Inc.	Submitted	GIS US	United States of America	A
Golden Agri-Resources	Submitted	GGR SP	Singapore	C
Gruma SAB	Not submitted	GRUMAB MM	Mexico	F
Grupo Bimbo, S.A.B. de C.V.	Submitted	BIMBOA MM	Mexico	B-
Grupo Herdez	Submitted	HERDEZ* MM	Mexico	Not scored
Grupo Lala	Not submitted	LALAB MM	Mexico	F
Gudang Garam	Not submitted	GGRM IJ	Indonesia	F
Heineken Holding NV	Submitted (see another)	HEIO NA	Netherlands	Heineken NV (B)
Heineken NV	Submitted	HEIA NA	Netherlands	B
Henan Shuanghui Investment & Development (A)	Not submitted	000895 CH	China	F
Hitejinro	Not submitted	000080 KS	Republic of Korea	F
Hormel Foods	Submitted	HRL US	United States of America	B-
HOUSE FOODS GROUP INC.	Not submitted	2810 JP	Japan	F
Imperial Brands	Submitted	IMB LN	United Kingdom of Great Britain and Northern Ireland	B-
Indofood Sukses Mak Tbk Pt	Not submitted	INDF IJ	Indonesia	F
Ingredion Incorporated	Submitted	INGR US	United States of America	B
IOI Corporation Berhad	Submitted	IOI MK	Malaysia	B-
ITC Limited	Not submitted	ITC IN	India	F
Ito En, Ltd.	Not submitted	2593 JP	Japan	F
Itoham Yonekyu Holdings	Not submitted	2296 JP	Japan	F
Japan Tobacco Inc.	Submitted	2914 JP	Japan	B
JBS S.A	Submitted	JBSS3 BZ	Brazil	Not available
JG Summit Holdings Inc.	Not submitted	JGS PM	Philippines	F
Kagome Co., Ltd.	Submitted	2811 JP	Japan	Not available
Kellogg Company	Submitted	K US	United States of America	B
Kerry Group PLC	Submitted	KYG ID	Ireland	B-
Keurig Dr Pepper	Submitted	KDP US	United States of America	Not available
Kewpie Corporation	Submitted	2809 JP	Japan	C
Kikkoman Corporation	Submitted	2801 JP	Japan	A-
Kirin Holdings Co Ltd	Submitted	2503 JP	Japan	A
KT&G	Not submitted	033780 KS	Republic of Korea	F
Kuala Lumpur Kepong	Not submitted	KLK MK	Malaysia	F
Kweichow Moutai	Not submitted	600519 CH	China	F
Lotte Chilsung	Not submitted	005300 KS	Republic of Korea	F
Lotte Corp	Not submitted	004990 KS	Republic of Korea	F
Marfrig Global Foods S/A	Submitted	MRFG3 BZ	Brazil	B
Marico	Submitted	MRCO IN	India	Not available
Mars	Submitted	4614Z US	United States of America	B
Marubeni Corporation	Submitted	8002 JP	Japan	B
McCormick & Company, Incorporated	Submitted	MKC US	United States of America	C
Mead Johnson Nutrition Company	Not submitted	MJN US	United States of America	F
MEGMILK SNOW BRAND Co.,Ltd.	Submitted	2270 JP	Japan	D
Meiji Holdings Co Ltd	Submitted	2269 JP	Japan	D
Metro AG	Submitted	B4B GR	Germany	Not available
MHP SE	Not submitted	MHPC:LI	United Kingdom of Great Britain and Northern Ireland	F
Mitsubishi Corporation	Submitted	8058 JP	Japan	D
Mitsubishi Shokuhin Co., Ltd.	Submitted (see another)	7451 JP	Japan	Mitsubishi Corporation (D)
Molson Coors Brewing Company	Not submitted	TAP US	United States of America	F
Mondelez International Inc	Submitted	MDLZ US	United States of America	D

APPENDIX IV: LIST OF COMPANY RESPONSE STATUS AND SCORES

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Monster Beverage Corporation	Not submitted	MNST US	United States of America	F
Mowi ASA	Not submitted	MOWI NO	Norway	F
Nestlé	Submitted	NESN SW	Switzerland	C
NH Foods Ltd.	Submitted	2282 JP	Japan	C
Nichirei Corporation	Submitted	2871 JP	Japan	B-
Nisshin Seifun Group Inc.	Not submitted	2002 JP	Japan	F
Nissin Foods Holdings Co., Ltd.	Not submitted	2897 JP	Japan	F
Nordzucker	Not submitted	3112Z GR	Germany	F
Nutreco Holding	Not submitted	NUO NA	Netherlands	F
Oceana	Submitted	OCE SJ	South Africa	B-
Olam International	Submitted	OLAM SP	Singapore	B-
Oriental Brewery Company	Not submitted	OBCLZ KS	Republic of Korea	F
Orion	Not submitted	001800 KS	Republic of Korea	F
Orkla ASA	Submitted	ORK NO	Norway	B-
Ottogi	Not submitted	007310 KS	Republic of Korea	F
PepsiCo, Inc.	Submitted	PEP US	United States of America	B
Pernod Ricard	Not submitted	RI FP	France	F
Philip Morris International	Submitted	PM US	United States of America	B
Pilgrims Pride	Not submitted	PPC US	United States of America	F
PINAR ENTEGRE ET VE UN SANAYİ A.Ş.	Submitted	PETUN TI	Turkey	B-
PINAR SÜT MAMULLERİ SANAYİİ A.Ş.	Submitted	PNSUT TI	Turkey	B
Pinnacle Foods Group	Submitted	PF US	United States of America	C
Pioneer Foods	Submitted	PFJ SJ	South Africa	C
PPB Group Berhad	Not submitted	PEP MK	Malaysia	F
PT Musim Mas	Submitted	0676250D SP	Indonesia	Not available
Pulmuone Co., Ltd.	Submitted	017810 KS	Republic of Korea	A-
RCL Foods Ltd	Submitted	RCL SJ	South Africa	C
Remy Cointreau	Submitted	RCO FP	France	C
Reynolds American Inc.	Submitted (see another)	RAI US	United States of America	British American Tobacco (B-)
Sapporo Holdings Limited	Submitted	2501 JP	Japan	Not available
Saputo Inc.	Submitted	SAP CN	Canada	Not available
Sumitomo Forestry Co., Ltd.	Submitted	1911 JP	Japan	C
Suntory Beverage & Food	Submitted	2587 JP	Japan	A
Swedish Match	Not submitted	SWMA SS	Sweden	F
Sysco Corporation	Submitted	SYU US	United States of America	B-
Takara Holdings Inc.	Not submitted	2531 JP	Japan	F
Tate & Lyle	Submitted	TATE LN	United Kingdom of Great Britain and Northern Ireland	D
The Coca-Cola Company	Submitted	KO US	United States of America	A-
The Hain Celestial Group, Inc.	Submitted	HAIN US	United States of America	D
The Hershey Company	Submitted	HSY US	United States of America	C
The J.M. Smucker Company	Submitted	SJM US	United States of America	C
The Kraft Heinz Company	Submitted	KHC US	United States of America	C
Tiger Brands	Submitted	TBS SJ	South Africa	B-
Tingyi (Cayman Islands) Holdings	Not submitted	322 HK	China, Hong Kong Special Administrative Region	F
Tongaat Hulett Ltd	Submitted	TON SJ	South Africa	B-
Toyo Suisan Kaisha, Ltd.	Not submitted	2875 JP	Japan	F
Treasury Wine Estates	Not submitted	TWE AU	Australia	F
TÜRK TUBORG BİRA VE MALT SANAYİİ A.Ş.	Not submitted	TBORG TI	Turkey	F
Tyson Foods, Inc.	Submitted	TSN US	United States of America	B-
ÜLKER BİSKÜVİ SANAYİ A.Ş.	Not submitted	ULKER TI	Turkey	F

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Uni-president Enterprises	Not submitted	1216 TT	Taiwan ROC	F
Universal Robina	Not submitted	URC PM	Philippines	F
Vina Concha y Toro S A	Submitted	CONCHA CC	Chile	B-
Want Want China Holdings Ltd.	Not submitted	151 HK	China	F
WH Group Ltd	Not submitted	288 HK	China	F
Wilmar International Limited	Submitted	WIL SP	Singapore	C
Yakult Honsha Co Ltd.	Not submitted	2267 JP	Japan	F
Yamazaki Baking Co., Ltd.	Not submitted	2212 JP	Japan	F
Fossil Fuels				
Adaro Energy PT	Not submitted	ADRO IJ	Indonesia	F
Anadarko Petroleum Corporation	Submitted	APC US	United States of America	C
Andeavor	Not submitted	ANDV US	United States of America	F
Antero Resources Corp	Not submitted	AR US	United States of America	F
APA Group	Not submitted	APA AU	Australia	F
Apache Corporation	Not submitted	APA US	United States of America	F
ARC Resources Ltd.	Submitted	ARX CN	Canada	B
AYGAZ A.Ş.	Not submitted	AYGAZ TI	Turkey	F
Baker Hughes, a GE Company	Not submitted	BHGE UN	United States of America	F
Banpu Public Co Ltd	Submitted	BANPU TB	Thailand	C
Bharat Petroleum Corporation	Not submitted	BPCL IN	India	F
BP	Not submitted	BP/ LN	United Kingdom of Great Britain and Northern Ireland	F
Cabot Oil & Gas Corporation	Not submitted	COG US	United States of America	F
Cairn India	Not submitted	CAIR IN	India	F
Caltex Australia	Not submitted	CTX AU	Australia	F
Canadian Natural Resources Limited	Submitted	CNQ CN	Canada	F
Chesapeake Energy Corporation	Not submitted	CHK US	United States of America	F
Chevron Corporation	Not submitted	CVX US	United States of America	F
China Coal Energy	Not submitted	601898 CH	China	F
China Oilfield Services	Not submitted	2883 HK	China	F
China Petroleum & Chemical Corporation	Not submitted	386 HK	China	F
China Shenhua Energy	Not submitted	1088 HK	China	F
Cimarex Energy Co.	Not submitted	XEC US	United States of America	F
CNOOC	Not submitted	883 HK	China	F
CNX Resources	Not submitted	CNX US	United States of America	F
Coal India	Not submitted	COAL IN	India	F
Compañía Española de Petróleos, S.A.U. (CEPSA)	Submitted	CEP SM	Spain	B-
Concho Resources	Not submitted	CXO US	United States of America	F
ConocoPhillips	Not submitted	COP US	United States of America	F
CONSOL Energy Inc	Submitted	CEIX	United States of America	Not available
Continental Resources Inc	Not submitted	CLR US	United States of America	F
Core Laboratories N.V.	Submitted	CLB US	Netherlands	C
COSAN S.A. Indústria e Comércio	Not submitted	CSAN3 BZ	Brazil	F
Cosmo Energy Holdings Co., Ltd.	Submitted	5021 JP	Japan	C
Crescent Point Energy Corporation	Submitted	CPG CN	Canada	C
DCC PLC	Not submitted	DCC LN	Ireland	F
Devon Energy Corporation	Submitted	DVN US	United States of America	C
Dialog Group Bhd	Not submitted	DLG MK	Malaysia	F
DMCI Holdings Inc	Not submitted	DMC PM	Philippines	F
Empresas COPEC S.A.	Not submitted	COPEC CI	Chile	F
ENAGAS	Submitted	ENG SM	Spain	C

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Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Enbridge Inc.	Submitted	ENB CN	Canada	C
Encana Corporation	Submitted	ECA CN	Canada	D
Enerplus Corporation	Submitted	ERF CN	Canada	B-
Eni SpA	Submitted	ENI IM	Italy	B-
EOG Resources, Inc.	Submitted	EOG US	United States of America	D
EQT Corporation	Not submitted	EQT US	United States of America	F
Equinor	Not submitted	EQNR NO	Norway	F
Exxaro Resources Ltd	Submitted	EXX SJ	South Africa	B-
Exxon Mobil Corporation	Not submitted	XOM US	United States of America	F
Formosa Petrochemical	Submitted	6505 TT	Taiwan ROC	B
Galp Energia SA	Submitted	GALP PL	Portugal	A
Glencore plc	Submitted	GLEN LN	Switzerland	B
Grupa Lotos S.A.	Not submitted	LTS PW	Poland	F
Halliburton Company	Submitted	HAL US	United States of America	C
Helmerich & Payne	Not submitted	HP US	United States of America	F
Hess Corporation	Not submitted	HES US	United States of America	F
HollyFrontier Corp.	Not submitted	HFC US	United States of America	F
Husky Energy Inc.	Submitted	HSE CN	Canada	B-
Idemitsu Kosan Co., Ltd.	Submitted	5019 JP	Japan	Not available
Imperial Oil	Not submitted	IMO CN	Canada	F
Inpex Corporation	Not submitted	1605 JP	Japan	F
IRPC Pcl	Not submitted	IRPC TB	Thailand	F
Japan Petroleum Exploration Co., Ltd.	Not submitted	1662 JP	Japan	F
JXTG Holdings, Inc.	Submitted	5020 JP	Japan	C-
Keppel Corp	Not submitted	KEP SP	Singapore	F
Keyera Corp.	Not submitted	KEY CN	Canada	F
Kinder Morgan Inc.	Not submitted	KMI US	United States of America	F
KOÇ HOLDİNG A.Ş.	Not submitted	KCHOL TI	Turkey	F
KOZA ANADOLU METAL MADENCİLİK İŞLETMELERİ A.Ş.	Not submitted	KOZAA TI	Turkey	F
Lubelski Węgiel BOGDANKA S.A.	Not submitted	LWB PW	Poland	F
Lukoil OAO	Not submitted	LKOH RM	Russian Federation	F
Lundin Petroleum	Not submitted	LUPE SS	Sweden	F
Lynas Corporation	Not submitted	LYC AU	Australia	F
Marathon Oil Corporation	Not submitted	MRO US	United States of America	F
Marathon Petroleum	Not submitted	MPC US	United States of America	F
MOL Nyrt.	Submitted	MOL HB	Hungary	C
Murphy Oil Corporation	Not submitted	MUR US	United States of America	F
National Oilwell Varco, Inc.	Not submitted	NOV US	United States of America	F
Naturgy Energy Group SA	Submitted	NTGY SM	Spain	C
Neste Oyj	Submitted	NESTE FH	Finland	B-
New Hope	Not submitted	NHC AU	Australia	F
Newfield Exploration Co	Not submitted	NFX US	United States of America	F
Nexa Resources SA	Submitted	NEXA CN	Brazil	Not scored
Noble Energy, Inc.	Not submitted	NBL US	United States of America	F
Noble Group	Not submitted	NOBL SP	Singapore	F
Novatek OAO	Not submitted	NVTK RM	Russian Federation	F
Occidental Petroleum Corporation	Submitted	OXY US	United States of America	C
Oil & Natural Gas	Not submitted	ONGC IN	India	F
Oil Search	Submitted	OSH AU	Australia	C
OMV AG	Submitted	OMV AV	Austria	Not scored
Oneok Inc.	Not submitted	OKE US	United States of America	F

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
PETROCHINA Company Limited	Not submitted	857 HK	China	F
Petrofac	Not submitted	PFC LN	United Kingdom of Great Britain and Northern Ireland	F
Petróleo Brasileiro SA - Petrobras	Submitted	PETR3 BZ	Brazil	A-
Petronas Dagangan Berhad	Not submitted	PETD MK	Malaysia	F
Peyto Exploration & Development Corp.	Not submitted	PEY CN	Canada	F
Phillips 66	Not submitted	PSX US	United States of America	F
Pioneer Natural Resources	Not submitted	PXD US	United States of America	F
Polski Koncern Naftowy ORLEN	Not submitted	PKN PW	Poland	F
Polskie Górnictwo Naftowe i Gazownictwo SA	Not submitted	PGN PW	Poland	F
PTT	Submitted	PTT TB	Thailand	B-
PTT Exploration & Production Public Company Limited	Submitted	PTTEP TB	Thailand	B
Range Resources Corp.	Not submitted	RRC US	United States of America	F
Reliance Industries	Not submitted	RIL IN	India	F
Repsol	Not submitted	REP SM	Spain	F
Rosneft Oil Company	Submitted	ROSN RM	Russian Federation	Not scored
Royal Dutch Shell	Not submitted	RDSA LN	Netherlands	F
Saipem	Not submitted	SPM IM	Italy	F
Santos	Not submitted	STO AU	Australia	F
Schlumberger Limited	Not submitted	SLB US	United States of America	F
Seven Generations Energy	Not submitted	VII CN	Canada	F
Showa Shell Sekiyu K. K.	Submitted	5002 JP	Japan	C
SK Innovation Co Ltd	Not submitted	096770 KS	Republic of Korea	F
S-Oil Corp	Not submitted	010950 KS	Republic of Korea	F
Snam S.P.A	Submitted	SRG IM	Italy	C
Southwestern Energy	Not submitted	SWN US	United States of America	F
Spectra Energy Corp	Submitted (see another)	SE US	United States of America	Enbridge Inc. (C)
Suncor Energy Inc.	Submitted	SU CN	Canada	B-
Surgutneftegas OAO	Not submitted	SNGSP RM	Russian Federation	F
Tatneft OAO	Not submitted	TATN RM	Russian Federation	F
TechnipFMC	Submitted	FTI FP	France	C
Thai Oil Public Company Limited	Not submitted	TOP TB	Thailand	F
Tonen General Sekiyu K.K.	Not submitted	5012 JP	Japan	F
Total	Submitted	FP FP	France	A-
Tourmaline Oil Corp	Submitted	TOU CN	Canada	Not scored
TransCanada Corporation	Not submitted	TRP CN	Canada	F
Transneft OAO	Not submitted	TRNFP RM	Russian Federation	F
Transocean Ltd.	Not submitted	RIGN SW	Switzerland	F
TÜPRAŞ-TÜRKİYE PETROL RAFİNERİLERİ A.Ş.	Not submitted	TUPRS TI	Turkey	F
Valero Energy Corporation	Not submitted	VLO US	United States of America	F
Vermilion Energy Inc.	Not submitted	VET CN	Canada	F
Vopak	Submitted	VPK NA	Netherlands	Not scored
Whitehaven Coal	Not submitted	WHC AU	Australia	F
Williams Companies, Inc.	Not submitted	WMB US	United States of America	F
Woodside Petroleum	Not submitted	WPL AU	Australia	F
Yanzhou Coal Mining	Not submitted	1171 HK	China	F
Hospitality				
AccorHotels	Not submitted	AC FP	France	F
ARAMARK CORPORATION	Not submitted	ARMK US	United States of America	F
Arcos Dorados	Submitted	ARCO US	Brazil	Not scored

APPENDIX IV: LIST OF COMPANY RESPONSE STATUS AND SCORES

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Caesars Entertainment	Submitted	CZR US	United States of America	B
Chipotle Mexican Grill	Not submitted	CMG US	United States of America	F
Compass	Submitted	CPG LN	United Kingdom of Great Britain and Northern Ireland	B-
Darden Restaurants, Inc.	Not submitted	DRI US	United States of America	F
DO & CO AG	Not submitted	DOC AV	Austria	F
Domino's Pizza Enterprises	Not submitted	DMP AU	Australia	F
Hilton Worldwide, Inc.	Submitted	HLT US	United States of America	B
Hosken Consolidated Investments	Submitted	HCI SJ	South Africa	B
Intercontinental Hotels Group	Submitted	IHG LN	United Kingdom of Great Britain and Northern Ireland	C
Jollibee Foods	Not submitted	JFC PM	Philippines	F
Las Vegas Sands Corporation	Submitted	LVS US	United States of America	A
Marriott International, Inc.	Submitted	MAR US	United States of America	C
McDonald's Holdings Company (Japan), Ltd.	Submitted (see another)	2702 JP	Japan	McDonald's Corporation (C)
McDonald's Corporation	Submitted	MCD US	United States of America	C
NET HOLDING A.Ş.	Not submitted	NTHOL TI	Turkey	F
Oriental Land Co Ltd.	Not submitted	4661 JP	Japan	F
Resorttrust Inc	Not submitted	4681 JP	Japan	F
Restaurant Brands International	Not submitted	QSR CN	Canada	F
Seibu Holdings Inc.	Not submitted	9024 JP	Japan	F
Shangri-La Asia	Submitted	69 HK	China, Hong Kong Special Administrative Region	D
Skylark Co., Ltd.	Not submitted	3197 JP	Japan	F
Sodexo	Submitted	SW FP	France	C
Starbucks Corporation	Submitted	SBUX US	United States of America	C
Sun International Ltd	Submitted	SUI SJ	South Africa	B-
Tabcorp Holdings	Submitted	TAH AU	Australia	C
Virgin Active South Africa (Pty) Ltd	Submitted	0332966D SJ	South Africa	Not scored
Whitbread Plc	Not submitted	WTB LN	United Kingdom of Great Britain and Northern Ireland	F
Wyndham Destinations, Inc.	Not submitted	WYND US	United States of America	F
Yum China Holdings Inc	Not submitted	YUMC US	China	F
Yum! Brands, Inc.	Submitted	YUM US	United States of America	B
Zensho Holdings Co., Ltd.	Not submitted	7550 JP	Japan	F
Infrastructure				
Aboitiz Equity Ventures	Not submitted	AEV PM	Philippines	F
Aboitiz Power Corporation	Not submitted	AP PM	Philippines	F
ACCIONA S.A.	Submitted	ANA SM	Spain	A
Aeon Mall Co., Ltd.	Submitted	8905 JP	Japan	Not scored
ALARKO HOLDING	Not submitted	ALARK TI	Turkey	F
AltaGas Ltd.	Not submitted	ALA CN	Canada	F
Ameren Corporation	Submitted	AEE US	United States of America	C
Arabtec Holding	Not submitted	ARTC UH	United Arab Emirates	F
ATCO Ltd.	Not submitted	ACO/X CN	Canada	F
CenterPoint Energy, Inc.	Not submitted	CNP US	United States of America	F
Centrais Elétricas Brasileiras S/A (ELETROBRAS)	Submitted	ELET3 BZ	Brazil	B
China Communications Construction	Not submitted	1800 HK	China	F
China Railway Construction	Not submitted	601186 CH	China	F
China State Construction International Holdings Ltd	Submitted	3311 HK	China	C
Chiyoda Corporation	Not submitted	6366 JP	Japan	F

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Cia Paranaense de Energia - COPEL	Not submitted	CPLE3 BZ	Brazil	F
CIMIC Group	Submitted	CIM AU	Australia	B-
Colbun SA	Submitted	COLBUN CI	Chile	B-
Companhia Energetica Minas Gerais - CEMIG	Submitted	CMIG3 BZ	Brazil	A-
Consolidated Edison, Inc.	Not submitted	ED US	United States of America	F
Contact Energy	Submitted	CEN NZ	New Zealand	Not scored
CPFL Energia SA	Submitted	CPFE3 BZ	Brazil	D
Daelim Industrial	Not submitted	000210 KS	Republic of Korea	F
Daiwa House Industry Co., Ltd.	Submitted	1925 JP	Japan	A-
ENEA S.A.	Not submitted	ENA PW	Poland	F
Enel Americas S.A.	Not submitted	ENELAM CI	Chile	F
ENEL SpA	Submitted	ENEL IM	Italy	B-
ENGIE Brasil Energia S.A.	Not submitted	EGIE3 BS	Brazil	F
ENN Energy Holdings	Not submitted	2688 HK	China	F
FERROVIAL	Submitted	FER SM	Spain	B
FirstEnergy Corporation	Submitted	FE US	United States of America	B-
Fluor Corporation	Submitted	FLR US	United States of America	C-
Fortis Inc.	Not submitted	FTS CN	Canada	F
GAIL	Not submitted	GAIL IN	India	F
Gamuda	Not submitted	GAM MK	Malaysia	F
HDC Holdings	Not submitted	012630 KS	Republic of Korea	F
Hewlett Packard Enterprise Company	Submitted	HPE US	United States of America	A-
Hong Kong & China Gas Company Limited	Submitted	3 HK	China, Hong Kong Special Administrative Region	Not scored
Hyundai E&C	Submitted	000720 KS	Republic of Korea	C
Iida Group Holdings	Not submitted	3291 JP	Japan	F
IJM Corp Bhd	Not submitted	IJM MK	Malaysia	F
Kajima Corporation	Submitted	1812 JP	Japan	C
Korea Electric Power Corp	Not submitted	015760 KS	Republic of Korea	F
Korea Gas Corp	Not submitted	036460 KS	Republic of Korea	F
Korea Hydro & Nuclear Power Co., Ltd	Not submitted	015760 KS	Republic of Korea	F
Korea Midland Power	Not submitted	KOMIPO KS	Republic of Korea	F
Korea South-East Power	Not submitted	KOSEPCO KS	Republic of Korea	F
Korea Southern Power	Not submitted	KOSPO KS	Republic of Korea	F
Korea Western Power	Not submitted	KOWEPO KS	Republic of Korea	F
Kunlun Energy Company Limited	Not submitted	135 HK	China, Hong Kong Special Administrative Region	F
KYUDENKO	Not submitted	1959 JP	Japan	F
Larsen & Toubro	Not submitted	LT IN	India	F
Lennar Corporation	Not submitted	LEN US	United States of America	F
Morgan Sindall Group plc	Submitted	MGNS LN	United Kingdom of Great Britain and Northern Ireland	Not scored
MRV Engenharia e Participações	Submitted	MRVE3 BZ	Brazil	Not scored
Murray & Roberts Holdings Limited	Submitted	MUR SJ	South Africa	B
National Grid PLC	Submitted	NG. LN	United Kingdom of Great Britain and Northern Ireland	B-
NiSource Inc.	Submitted	NI US	United States of America	C
Obrascon Huarte Lain (OHL)	Submitted	OHL SM	Spain	B-
Panasonic Homes Co., Ltd.	Submitted (see another)	1924 JP	Japan	Panasonic Corporation (B-)
Pennon Group	Submitted	PNN LN	United Kingdom of Great Britain and Northern Ireland	C
PG&E Corporation	Submitted	PCG US	United States of America	C

APPENDIX IV: LIST OF COMPANY RESPONSE STATUS AND SCORES

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
PJSC Gazprom	Submitted	GAZP RM	Russian Federation	C
Posco Energy	Not submitted	PSCPWZ KS	Republic of Korea	F
PPL Corporation	Not submitted	PPL US	United States of America	F
Prairiesky Royalty Ltd	Not submitted	PSK CN	Canada	F
Public Service Enterprise Group Inc.	Not submitted	PEG US	United States of America	F
Qatar Electricity & Water Company	Not submitted	QEWS QD	Qatar	F
Republic Services, Inc.	Not submitted	RSG US	United States of America	F
Samsung C&T	Not submitted	028260 KS	Republic of Korea	F
Sekisui Chemical Co., Ltd.	Submitted	4204 JP	Japan	A-
Sekisui House, Ltd.	Submitted	1928 JP	Japan	B-
Sempra Energy	Submitted	SRE US	United States of America	B-
Shanghai Industrial Holding Ltd	Not submitted	363 HK	China, Hong Kong Special Administrative Region	F
Sims Metal Management	Submitted	SGM AU	Australia	C
Sinopec Engineering Group Co Ltd	Not submitted	2386 HK	China, Hong Kong Special Administrative Region	F
SK E&S	Not submitted	SKECLZ KS	Republic of Korea	F
Skanska AB	Submitted	SKAB SS	Sweden	B-
SNC-Lavalin Group Inc.	Submitted	SNC CN	Canada	C
Stericycle Inc.	Not submitted	SRCL US	United States of America	F
Suez	Not submitted	SEV FP	France	F
TAURON Polska Energia S.A.	Not submitted	TPE PW	Poland	F
Taylor Wimpey Plc	Submitted	TW. LN	United Kingdom of Great Britain and Northern Ireland	B
TEKFEN HOLDİNG A.Ş.	Submitted	TKFEN TI	Turkey	B
The AES Corporation	Submitted	AES US	United States of America	B
Toho Gas Co., Ltd.	Not submitted	9533 JP	Japan	F
Tokyo Gas Co., Ltd.	Submitted	9531 JP	Japan	Not available
UGI Corporation	Not submitted	UGI US	United States of America	F
Umicore	Submitted	UMI BB	Belgium	D
Uniper SE	Not submitted	UN01 GR	Germany	F
Veolia Environnement SA	Submitted	VIE FP	France	C
VERBUND AG	Not submitted	VER AV	Austria	F
Vinci	Submitted	DG FP	France	C
Waste Management, Inc.	Submitted	WM US	United States of America	B
Manufacturing				
3M Company	Submitted	MMM US	United States of America	C
ABB	Submitted	ABBN SW	Switzerland	Not scored
Acer Inc.	Not submitted	2353 TT	Taiwan ROC	F
Acuity Brands Inc	Not submitted	AYI US	United States of America	F
Advanced Micro Devices, Inc	Submitted	AMD US	United States of America	C
Advantest Corporation	Submitted	6857 JP	Japan	C
AECI Ltd Ord	Submitted	AFE SJ	South Africa	B
Agrium Inc.	Submitted	AGU CN	Canada	Not available
Aica Kogyo Co Ltd	Submitted	4206 JP	Japan	C-
Air Liquide	Submitted	AI FP	France	D
Air Products & Chemicals, Inc.	Submitted	APD US	United States of America	C
Air Water Inc.	Not submitted	4088 JP	Japan	F
Aisin Seiki Co., Ltd.	Submitted	7259 JP	Japan	C
AKSA AKRİLİK KİMYA SANAYİİ A.Ş.	Submitted	AKSA TI	Turkey	B-
AkzoNobel	Submitted	AKZA NA	Netherlands	C
Albmarle Corp.	Not submitted	ALB US	United States of America	F

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Alfa Laval Corporate AB	Not submitted	ALFA SS	Sweden	F
Allegion Plc	Submitted	ALLE US	Ireland	B-
Alps Electric Co., Ltd.	Submitted	6770 JP	Japan	C
Alstom	Not submitted	ALO FP	France	F
Amada Holdings, Ltd.	Not submitted	6113 JP	Japan	F
Amcor	Submitted	AMC AU	Australia	C
Ametek, Inc.	Not submitted	AME US	United States of America	F
AmorePacific Corporation	Not submitted	090430 KS	Republic of Korea	F
AmorePacific Group	Not submitted	002790 KS	Republic of Korea	F
Amphenol Corporation	Submitted	APH US	United States of America	D
Analog Devices, Inc.	Submitted	ADI US	United States of America	C
ANDRITZ AG	Not submitted	ANDR AV	Austria	F
Apple Inc.	Not submitted	AAPL US	United States of America	F
Applied Materials Inc.	Submitted	AMAT US	United States of America	C
Aptiv	Submitted	APTV US	United States of America	B-
ARÇELİK A.Ş.	Submitted	ARCLK TI	Turkey	B
Arconic	Submitted	ARNC US	United States of America	Not scored
ARKEMA	Submitted	AKE FP	France	B-
ARM Holdings	Submitted	ARM LN	United Kingdom of Great Britain and Northern Ireland	C
Asahi Kasei Corporation	Submitted	3407 JP	Japan	B
ASELSAN ELEKTRONİK SANAYİ VE TİCARET A.Ş.	Not submitted	ASELS TI	Turkey	F
Ashland Global Holdings Inc	Submitted	ASH US	United States of America	Not scored
Asia Pulp & Paper	Not submitted	Private company	Indonesia	F
ASM International	Not submitted	ASM NA	Netherlands	F
ASML Holding	Submitted	ASML NA	Netherlands	C
Assa Abloy	Submitted	ASSAB SS	Sweden	Not available
ASUSTeK Computer Inc	Submitted	2357 TT	Taiwan ROC	Not scored
AT&S Austria Technologie & Systemtechnik AG	Submitted	ATS AV	Austria	B-
Atlas Copco	Submitted	ATCOA SS	Sweden	B-
AU Optronics	Submitted	2409 TT	Taiwan ROC	B-
Audi AG	Submitted (see another)	NSU GR	Germany	Volkswagen AG (A-)
Autoneum Management AG	Submitted	AUTN SW	Switzerland	C
Avery Dennison Corporation	Submitted	AVY US	United States of America	D
Azbil Corporation	Submitted	6845 JP	Japan	B-
BAE Systems	Not submitted	BA/ LN	United Kingdom of Great Britain and Northern Ireland	F
Bajaj Auto	Not submitted	BJAUT IN	India	F
Ball Corporation	Submitted	BLL US	United States of America	C
BASF SE	Submitted	BAS GR	Germany	A-
Beiersdorf AG	Submitted	BEI GR	Germany	C
Bel Fuse Inc.	Not submitted	BELFA US	United States of America	F
Bemis Company	Submitted	BMS US	United States of America	B-
BillerudKorsnäs	Submitted	BILL SS	Sweden	C
Birla Carbon	Submitted	LIBCBCZ CH	United States of America	C
BMW AG	Submitted	BMW GR	Germany	B
BorgWarner	Submitted	BWA US	United States of America	C
Braskem S/A	Submitted	BRKM3 BZ	Brazil	A
Brembo SpA	Submitted	BRE IM	Italy	A
Brilliance China Automotive Holdings Ltd	Not submitted	1114 HK	China, Hong Kong Special Administrative Region	F

APPENDIX IV: LIST OF COMPANY RESPONSE STATUS AND SCORES

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Broadcom Limited	Not submitted	AVGO US	United States of America	F
Brother Industries, Ltd.	Submitted	6448 JP	Japan	B-
BYD	Submitted	1211 HK	China	D-
Calsonic Kansei Corporation	Submitted	7248 JP	Japan	B
Canon Inc.	Submitted	7751 JP	Japan	B-
Casio Computer Co., Ltd.	Submitted	6952 JP	Japan	C
Caterpillar Inc.	Not submitted	CAT US	United States of America	F
Celanese Corporation	Not submitted	CE US	United States of America	F
CF Industries Holdings, Inc.	Not submitted	CF US	United States of America	F
Chongqing Changan Automobile Company Limited	Not submitted	200625 CH	China	F
Church & Dwight Co., Inc	Not submitted	CHD US	United States of America	F
Cisco Systems, Inc.	Submitted	CSCO US	United States of America	C
Clariant AG	Submitted	CLN SW	Switzerland	B-
Clorox Company	Submitted	CLX US	United States of America	B-
CNH Industrial NV	Submitted	CNHI US	United Kingdom of Great Britain and Northern Ireland	A
Cobham	Not submitted	COB LN	United Kingdom of Great Britain and Northern Ireland	F
Colgate Palmolive Company	Submitted	CL US	United States of America	A-
Corning Incorporated	Submitted	GLW US	United States of America	Not scored
Coromandel International	Not submitted	CRIN IN	India	F
Coty Inc	Not submitted	COTY US	United States of America	F
Covestro AG	Not submitted	1COV GY	Germany	F
Croda International	Submitted	CRDA LN	United Kingdom of Great Britain and Northern Ireland	B-
Crown Holdings	Not submitted	CCK US	United States of America	F
Cummins Inc.	Submitted	CMI US	United States of America	B-
Dabur India	Not submitted	DABUR IN	India	F
Daicel Corporation	Submitted	4202 JP	Japan	C
Daifuku Co., Ltd.	Not submitted	6383 JP	Japan	F
Daihatsu Motor Co., Ltd.	Submitted	7262 JP	Japan	B-
Daikin Industries, Ltd.	Submitted	6367 JP	Japan	B-
Daimler AG	Not submitted	DAI GR	Germany	F
Darfon Electronics Corp	Submitted	8163 TT	Taiwan ROC	B-
Deere & Company	Submitted	DE US	United States of America	C
Delta Electronics	Submitted	2308 TT	Taiwan ROC	B
Denka Company Limited	Not submitted	4061 JP	Japan	F
Denso Corporation	Submitted	6902 JP	Japan	B-
DIC Corporation	Submitted	4631 JP	Japan	B-
DISCO Corporation	Submitted	6146 JP	Japan	D
DMG Mori Seiki Co., Ltd.	Not submitted	6141 JP	Japan	F
Dongfeng Motor Group	Not submitted	489 HK	China	F
Doosan Heavy Industries & Construction	Not submitted	034020 KS	Republic of Korea	F
Dover Corporation	Submitted	DOV US	United States of America	Not available
DowDuPont	Submitted	DWDP US	United States of America	Not scored
DS Smith Plc	Submitted	SMDS LN	United Kingdom of Great Britain and Northern Ireland	B
E.I. du Pont de Nemours and Company	Submitted	DD US	United States of America	C
Eastman Chemical Company	Submitted	EMN US	United States of America	C
Eaton Corporation	Submitted	ETN US	United States of America	D
Ebara Corporation	Submitted	6361 JP	Japan	D
Edgewell Personal Care	Not submitted	EPC US	United States of America	F
Electrolux	Submitted	ELUXB SS	Sweden	Not available

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Emerson Electric Co.	Submitted	EMR US	United States of America	D
Ems-Chemie Holding AG	Not submitted	EMSN SW	Switzerland	F
Ericsson	Not submitted	ERICB SS	Sweden	F
Estee Lauder Companies Inc.	Not submitted	EL US	United States of America	F
EUROPAC Papeles Y Cartones de Europa SA	Not submitted	PAC SM	Spain	F
Evonik Industries AG	Submitted	EVKIF US	Germany	D
EXEDY Corporation	Submitted	7278 JP	Japan	B-
F5 Networks, Inc.	Not submitted	FFIV US	United States of America	F
Fanuc Corporation	Submitted	6954 JP	Japan	D
Faurecia	Submitted	EO FP	France	C-
Ferrari	Not submitted	RACE IM	Italy	F
Fiat Chrysler Automobiles NV	Submitted	FCAU US	Italy	B
FIRMENICH SA	Submitted	4282549Z SM	Switzerland	A
First Solar Inc	Submitted	FSLR US	United States of America	B
FLIR Systems	Not submitted	FLIR US	United States of America	F
Flowserve Corporation	Not submitted	FLS US	United States of America	F
FMC Corp	Submitted	FMC US	United States of America	C
Ford Motor Company	Submitted	F US	United States of America	A
FORD OTOMOTİV SANAYİ A.Ş.	Submitted	FROTO TI	Turkey	C
Formosa Chemicals & Fibre Corporation	Submitted	1326 TT	Taiwan ROC	B
Formosa Plastics Corp	Not submitted	1301 TT	Taiwan ROC	F
Fortive	Not submitted	FTV UN	United States of America	F
FP Corporation	Not submitted	7947 JP	Japan	F
FUCHS PETROLUB SE	Submitted	FPE GR	Germany	Not scored
Fuji Electric Co., Ltd.	Submitted	6504 JP	Japan	C
FUJIFILM Holdings Corporation	Submitted	4901 JP	Japan	B-
Fujikura Ltd.	Submitted	5803 JP	Japan	B-
Fujitsu General Limited	Not submitted	6755 JP	Japan	F
Furukawa Electric Co., Ltd.	Submitted	5801 JP	Japan	B-
Garmin Ltd	Not submitted	GRMN US	United States of America	F
GEA Group AG	Not submitted	G1A GR	Germany	F
Geely Automobile Holdings	Not submitted	175 HK	China, Hong Kong Special Administrative Region	F
General Dynamics Corporation	Not submitted	GD US	United States of America	F
General Electric Company	Not submitted	GE US	United States of America	F
General Motors Company	Submitted	GM US	United States of America	A-
Gestamp	Not submitted	495294Z SM	Spain	F
Givaudan SA	Submitted	GIVN SW	Switzerland	A-
GKN	Not submitted	GKN LN	United Kingdom of Great Britain and Northern Ireland	F
Glory Ltd.	Submitted	6457 JP	Japan	C
Godrej Consumer Products	Not submitted	GCPL IN	India	F
GOLD CIRCUIT ELECTRONICS LTD	Submitted	2368 TT	Taiwan ROC	B-
Graphic Packaging	Submitted	GPK US	United States of America	B-
Great Wall Motor Company (H)	Not submitted	2333 HK	China	F
Groupe PSA	Not submitted	UG FP	France	F
Grupa Azoty S.A.	Not submitted	ATT PW	Poland	F
GS Yuasa Corporation	Submitted	6674 JP	Japan	C
Guangzhou Automobile Group Co. Ltd	Not submitted	2238 HK	China	F
GÜBRE FABRIKALARI T.A.Ş.	Not submitted	GUBRF TI	Turkey	F
Hanwha Chemical Corp	Not submitted	009830 KS	Republic of Korea	F
Harley-Davidson, Inc.	Not submitted	HOG US	United States of America	F

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Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Harman International Industries Inc	Not submitted	HAR US	United States of America	F
Harris Corporation	Submitted	HRS US	United States of America	B-
Hasbro, Inc.	Submitted	HAS US	United States of America	Not available
Heiwa Corporation	Not submitted	6412 JP	Japan	F
Hengan Intl Group	Not submitted	1044 HK	China	F
Henkel AG & Co. KGaA	Submitted	HEN3 GR	Germany	B-
Hero Motocorp Ltd	Not submitted	HMCL IN	India	F
Hexagon AB	Not submitted	HEXAB SS	Sweden	F
Hindustan Unilever	Not submitted	HUVR IN	India	F
Hino Motors, Ltd.	Submitted	7205 JP	Japan	B-
Hirose Electric Co., Ltd.	Not submitted	6806 JP	Japan	F
Hitachi Chemical Company, Ltd.	Submitted	4217 JP	Japan	C
Hitachi Construction Machinery Co., Ltd.	Submitted	6305 JP	Japan	B-
Hitachi High-Technologies Corporation	Not submitted	8036 JP	Japan	F
Hitachi Kokusai Electric Inc	Submitted	6756 JP	Japan	C
Hitachi, Ltd.	Submitted	6501 JP	Japan	B
Hon Hai Precision Industry	Submitted	2317 TT	Taiwan ROC	D
Honda Motor Co., Ltd.	Submitted	7267 JP	Japan	B-
Honeywell International Inc.	Not submitted	HON US	United States of America	F
HORIBA, Ltd.	Submitted	6856 JP	Japan	C
Hoshizaki Electric Co., Ltd.	Not submitted	6465 JP	Japan	F
HP Inc	Submitted	HPQ US	United States of America	B
Husqvarna AB	Submitted	HUSQB SS	Sweden	Not available
Hyosung Corporation	Not submitted	004800 KS	Republic of Korea	F
Hyundai Heavy Industries Co Ltd	Not submitted	009540 KS	Republic of Korea	F
Hyundai Mobis Co Ltd	Not submitted	012330 KS	Republic of Korea	F
Hyundai Motor Co	Not submitted	005380 KS	Republic of Korea	F
Ibiden Co., Ltd.	Submitted	4062 JP	Japan	C
IHI Corporation	Not submitted	7013 JP	Japan	F
Illinois Tool Works Inc.	Submitted	ITW US	United States of America	C
IMI plc	Not submitted	IMI LN	United Kingdom of Great Britain and Northern Ireland	F
Incitec Pivot	Submitted	IPL AU	Australia	C
Infineon	Submitted	IFX GR	Germany	C
Ingenico	Submitted	ING FP	France	Not scored
Ingersoll-Rand Co. Ltd.	Submitted	IR US	United States of America	C
Inner Mongolia Junzheng Energy & Chemical Group Co., Ltd	Not submitted	601216 CH	China	F
Innolux Corporation	Submitted	3481 TT	Taiwan ROC	B
Integrated Device Technology, Inc.	Submitted	IDTI US	United States of America	D
Intel Corporation	Submitted	INTC US	United States of America	B-
International Flavors & Fragrances Inc.	Submitted	IFF US	United States of America	A
International Paper Company	Submitted	IP US	United States of America	Not available
Isuzu Motors Limited	Submitted	7202 JP	Japan	B-
Japan Aviation Electronics Industry, Limited	Not submitted	6807 JP	Japan	F
Japan Display Inc.	Submitted	6740 JP	Japan	C
Johnson Controls International PLC	Submitted	JCI US	United States of America	B-
Johnson Matthey	Submitted	JMAT LN	United Kingdom of Great Britain and Northern Ireland	B-
JSR Corporation	Submitted	4185 JP	Japan	B
JTEKT Corporation	Submitted	6473 JP	Japan	B-
Juniper Networks, Inc.	Submitted	JNPR US	United States of America	B-
Kaneka Corporation	Not submitted	4118 JP	Japan	F

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Kansai Paint Co., Ltd.	Not submitted	4613 JP	Japan	F
KAO Corporation	Submitted	4452 JP	Japan	A
Kawasaki Heavy Industries, Ltd.	Not submitted	7012 JP	Japan	F
Keyence Corporation	Not submitted	6861 JP	Japan	F
Kia Motors Corp	Not submitted	000270 KS	Republic of Korea	F
Kimberly-Clark Corporation	Submitted	KMB US	United States of America	B-
Kimberly-Clark de México S.A.B. de C.V.	Not submitted	KIMBERA MM	Mexico	F
KLA	Submitted	KLAC US	United States of America	D
Kobayashi Pharmaceutical Co., Ltd.	Not submitted	4967 JP	Japan	F
Koito Manufacturing Co., Ltd.	Submitted	7276 JP	Japan	C
Komatsu Ltd.	Submitted	6301 JP	Japan	A-
Kone Oyj	Not submitted	KNEBV FH	Finland	F
Konica Minolta, Inc.	Submitted	4902 JP	Japan	C
Koninklijke DSM	Submitted	DSM NA	Netherlands	B-
KOSE Corporation	Submitted	4922 JP	Japan	Not scored
Kubota Corporation	Submitted	6326 JP	Japan	A-
Kuraray Co., Ltd.	Not submitted	3405 JP	Japan	F
Kurita Water Industries Ltd.	Submitted	6370 JP	Japan	C
Kyocera Corporation	Submitted	6971 JP	Japan	B
L3 Technologies, Inc.	Not submitted	LLL US	United States of America	F
Lam Research Corp.	Submitted	LRCX US	United States of America	B-
LANXESS AG	Not submitted	LXS GR	Germany	F
Lear	Submitted	LEA US	United States of America	C
Lee & Man Paper Manufacturing	Not submitted	2314 HK	China, Hong Kong Special Administrative Region	F
Leggett & Platt, Inc.	Not submitted	LEG US	United States of America	F
LEGRAND	Not submitted	LR FP	France	F
Lenovo Group	Submitted	992 HK	United States of America	C
Leonardo	Not submitted	LDO IM	Italy	F
Lexmark International, Inc.	Submitted	LXK US	United States of America	C
LG Chem Ltd	Submitted	051910 KS	Republic of Korea	B
LG Display	Submitted	034220 KS	Republic of Korea	A
LG Electronics	Submitted	066570 KS	Republic of Korea	B-
LG Household & Health Care	Submitted	051900 KS	Republic of Korea	B-
LG Innotek	Submitted	011070 KS	Republic of Korea	A
Linde PLC	Submitted	LIN GR	Germany	B-
Linear Technology Corp.	Submitted (see another)	LLTC US	United States of America	Analog Devices, Inc. (C)
Lintec Corporation	Submitted	7966 JP	Japan	C
Lion Corporation	Not submitted	4912 JP	Japan	F
Lite-On Technology Corporation	Not submitted	2301 TT	Taiwan ROC	F
Lockheed Martin Corporation	Submitted	LMT US	United States of America	B
L'Oréal	Submitted	OR FP	France	A
Lotte Chemical Corp	Not submitted	011170 KS	Republic of Korea	F
LyondellBasell Industries N.V.	Not submitted	LYB US	Netherlands	F
Mabuchi Motor Co., Ltd.	Not submitted	6592 JP	Japan	F
Magna International Inc.	Submitted	MG CN	Canada	C
Mahindra & Mahindra	Submitted	MM IN	India	A-
Makita Corporation	Not submitted	6586 JP	Japan	F
MAN SE	Submitted (see another)	MAN GR	Germany	Volkswagen AG (A-)
Maruti Suzuki India	Not submitted	MSIL IN	India	F
Masco Corporation	Submitted	MAS US	United States of America	C

APPENDIX IV: LIST OF COMPANY RESPONSE STATUS AND SCORES

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Maxim Integrated Products, Inc.	Submitted	MXIM US	United States of America	D
Mazda Motor Corporation	Submitted	7261 JP	Japan	B-
Meggitt	Submitted	MGGT LN	United Kingdom of Great Britain and Northern Ireland	D
Meidensha Corporation	Submitted	6508 JP	Japan	C
Merck KGaA	Submitted	MRK GR	Germany	B-
Methanex Corporation	Not submitted	MX CN	Canada	F
Metsä Board Corporation	Submitted	METSB FH	Finland	A
Metso	Submitted	METSO FH	Finland	Not scored
Mexichem SAB de CV	Not submitted	MEXCHEM* MM	Mexico	F
Microchip Technology	Not submitted	MCHP US	United States of America	F
Micron Technology, Inc.	Submitted	MU US	United States of America	B-
MinebeaMitsumi Inc.	Submitted	6479 JP	Japan	B
Mitsubishi Chemical Holdings Corporation	Submitted	4188 JP	Japan	A-
Mitsubishi Electric Corporation	Submitted	6503 JP	Japan	A
Mitsubishi Gas Chemical Company, Inc.	Submitted	4182 JP	Japan	C
Mitsubishi Heavy Industries, Ltd.	Submitted	7011 JP	Japan	F
Mitsubishi Motors Corporation	Submitted	7211 JP	Japan	B-
Mitsui Chemicals, Inc.	Submitted	4183 JP	Japan	B-
Mitsui Engineering & Shipbuilding Co Ltd	Not submitted	7003 JP	Japan	F
Miura Co., Ltd.	Not submitted	6005 JP	Japan	F
Molex, LLC	Submitted	0133220D US	United States of America	C-
Mondi Limited	Not submitted	MND SJ	South Africa	F
Mondi PLC	Submitted	MNDI LN	United Kingdom of Great Britain and Northern Ireland	B
Monsanto India Ltd	Not submitted	MCHM IN	India	F
Motorola Solutions	Submitted	MSI US	United States of America	C
Murata Mfg. Co.	Submitted	6981 JP	Japan	B
Nabtesco Corporation	Submitted	6268 JP	Japan	A
Nampak Ltd	Submitted	NPK SJ	South Africa	C
Nan Ya Plastics	Submitted	1303 TT	Taiwan ROC	B
Natura Cosméticos SA	Not submitted	NATU3 BZ	Brazil	F
NetApp Inc.	Submitted	NTAP US	United States of America	C
Newell Rubbermaid Inc.	Submitted	NWL US	United States of America	D
NGK Insulators, Ltd.	Submitted	5333 JP	Japan	B-
NGK Spark Plug Co., Ltd.	Submitted	5334 JP	Japan	D
NHK Spring Co., Ltd.	Not submitted	5991 JP	Japan	F
Nidec Corporation	Submitted	6594 JP	Japan	D
Nifco Inc.	Not submitted	7988 JP	Japan	F
Nikon Corporation	Submitted	7731 JP	Japan	B
Nine Dragons Paper Holdings	Not submitted	2689 HK	China, Hong Kong Special Administrative Region	F
Nippon Electric Glass Co., Ltd.	Not submitted	5214 JP	Japan	F
Nippon Kayaku Co., Ltd.	Submitted	4272 JP	Japan	C
Nippon Paint Holdings Co., Ltd.	Not submitted	4612 JP	Japan	F
Nippon Shokubai Co., Ltd.	Submitted	4114 JP	Japan	D
Nissan Chemical Industries, Ltd.	Submitted	4021 JP	Japan	B
Nissan Motor Co., Ltd.	Submitted	7201 JP	Japan	B
Nissan Shatai Co., Ltd.	Not submitted	7222 JP	Japan	F
Nisshinbo Holdings Inc.	Submitted	3105 JP	Japan	D
Nitto Denko Corporation	Submitted	6988 JP	Japan	B-
NOK Corporation	Submitted	7240 JP	Japan	C

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Nokia Group	Not submitted	NOKIA FH	Finland	F
Nordic Semiconductor ASA	Submitted	NOD NO	Norway	C
Northrop Grumman Corp	Not submitted	NOC US	United States of America	F
Novatek Microelectronics Ltd	Not submitted	3034 TT	Taiwan ROC	F
Novozymes A/S	Submitted	NZYM DC	Denmark	B-
NSK Ltd.	Submitted	6471 JP	Japan	C
NTN Corporation	Submitted	6472 JP	Japan	B-
NVIDIA Corporation	Submitted	NVDA US	United States of America	B-
NXP Semiconductors	Submitted	NXPI US	Netherlands	Not scored
OCI N.V.	Not submitted	OCI NA	Netherlands	F
Oji Holdings Corporation	Submitted	3861 JP	Japan	B-
Okuma Corporation	Not submitted	6103 JP	Japan	F
OMNIA HOLDINGS LTD	Submitted	OMN SJ	South Africa	B
OMRON Corporation	Submitted	6645 JP	Japan	B
Orica	Not submitted	ORI AU	Australia	F
Orora	Submitted	ORA AU	Australia	C
OSG Corporation	Not submitted	6136 JP	Japan	F
OSRAM Licht AG	Submitted	OSR GR	Germany	C
OTOKAR OTOMOTİV VE SAVUNMA SANAYİ A.Ş.	Not submitted	OTKAR TI	Turkey	F
PACCAR Inc	Not submitted	PCAR US	United States of America	F
Packaging Corporation Of America	Not submitted	PKG US	United States of America	F
Pall Corporation	Submitted	PLL US	United States of America	Not available
Panasonic Corporation	Submitted	6752 JP	Japan	B-
Parker-Hannifin Corporation	Submitted	PH US	United States of America	D
Pentair plc	Not submitted	PNR US	United States of America	F
PETKİM PETROKİMYA HOLDİNG A.Ş.	Not submitted	PETKM TI	Turkey	F
PhosAgro OAO	Not submitted	PHOR RM	Russian Federation	F
Piaggio & C SpA	Submitted	PIA IM	Italy	B-
Pigeon Corp	Not submitted	7956 JP	Japan	F
Pola Orbis Holdings Inc.	Not submitted	4927 JP	Japan	F
Polaris Industries Inc.	Not submitted	PII US	United States of America	F
POLİSAN HOLDİNG A.Ş.	Submitted	POLHO TI	Turkey	C
Porsche AG	Submitted (see another)	PAH3 GY	Germany	Volkswagen AG (A-)
Powertech Technology Inc	Submitted	6239 TT	Taiwan ROC	B-
PPG Industries, Inc.	Submitted	PPG US	United States of America	D
Praxair, Inc.	Submitted	PX US	United States of America	B-
Procter & Gamble Company	Submitted	PG US	United States of America	B-
Prysmian SpA	Submitted	PRY IM	Italy	C
PTT Global Chemical	Submitted	PTTGC TB	Thailand	B-
Qorvo	Submitted	QRVO US	United States of America	Not scored
QUALCOMM Inc.	Submitted	QCOM US	United States of America	B
Quanta Computer	Submitted	2382 TT	Taiwan ROC	C
Raytheon Company	Submitted	RTN US	United States of America	B-
Reckitt Benckiser	Submitted	RB. LN	United Kingdom of Great Britain and Northern Ireland	B
Renault	Submitted	RNO FP	France	B-
Renesas Electronics Corporation	Not submitted	6723 JP	Japan	F
Rengo Co., Ltd.	Submitted	3941 JP	Japan	C
Ricoh Co., Ltd.	Submitted	7752 JP	Japan	B
Rinnai Corporation	Not submitted	5947 JP	Japan	F
Rockwell Automation	Submitted	ROK US	United States of America	D

APPENDIX IV: LIST OF COMPANY RESPONSE STATUS AND SCORES

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Rockwell Collins, Inc.	Not submitted	COL US	United States of America	F
RODATA SRL	Submitted	338686Z RO	Romania	B-
Rohm Co., Ltd.	Submitted	6963 JP	Japan	B-
Rolls-Royce	Not submitted	RR. LN	United Kingdom of Great Britain and Northern Ireland	F
Rotork PLC	Submitted	ROR LN	United Kingdom of Great Britain and Northern Ireland	C
Safran	Not submitted	SAF FP	France	F
Samsung Electro-Mechanics Co., Ltd.	Submitted	009150 KS	Republic of Korea	C
Samsung Electronics	Submitted	005930 KS	Republic of Korea	A-
Samsung SDI	Not submitted	006400 KS	Republic of Korea	F
Sandvik AB	Not submitted	SAND SS	Sweden	F
Sankyo Co., Ltd.	Not submitted	6417 JP	Japan	F
Sanwa Holdings Corporation	Not submitted	5929 JP	Japan	F
SCA	Not submitted	SCAB SS	Sweden	F
Schaeffler	Submitted	SHA GY	Germany	D
Schindler Holding AG	Not submitted	SCHP SW	Switzerland	F
Schneider Electric	Submitted	SU FP	France	B-
SCREEN Holdings CO., Ltd.	Submitted	7735 JP	Japan	B-
Seagate Technology LLC	Submitted	STX US	United States of America	B
Sealed Air Corp.	Not submitted	SEE US	United States of America	F
Seiko Epson Corporation	Submitted	6724 JP	Japan	B
Semiconductor Manufacturing International Corp	Not submitted	981 HK	China, Hong Kong Special Administrative Region	F
Sensata Technologies Holding NV	Submitted	ST US	Netherlands	C
Sharp Corporation	Submitted	6753 JP	Japan	C
Sherwin-Williams Company	Submitted	SHW US	United States of America	C
Shin-Etsu Chemical Co., Ltd.	Submitted	4063 JP	Japan	D
Shiseido Co., Ltd.	Submitted	4911 JP	Japan	C
Showa Denko K.K.	Submitted	4004 JP	Japan	Not available
Siam Cement	Not submitted	SCC TB	Thailand	F
Siemens AG	Submitted	SIE GR	Germany	B-
Sika Group AG	Submitted	SIKA SW	Switzerland	C
Siliconware Precision Industries Co.	Not submitted	2325 TT	Taiwan ROC	F
Siltronic AG	Submitted	WAF GR	Germany	Not available
SK Hynix	Submitted	000660 KS	Republic of Korea	B
SKF	Not submitted	SKFA SS	Sweden	F
Skyworks Solutions, Inc.	Submitted	SWKS US	United States of America	Not scored
SMC Corporation	Submitted	6273 JP	Japan	Not scored
Smiths Group	Submitted	SMIN LN	United Kingdom of Great Britain and Northern Ireland	Not scored
Smurfit Kappa Group PLC	Submitted	SKG ID	Ireland	B-
Snap-On Inc	Not submitted	SNA US	United States of America	F
Sociedad Quimica y Minera de Chile SA	Not submitted	SQM/B CI	Chile	F
SODA SANAYÍ A.Ş.	Not submitted	SODA TI	Turkey	F
Solvay S.A.	Submitted	SOLB BB	Belgium	C
Sony Corporation	Submitted	6758 JP	Japan	B
Stanley Black & Decker, Inc.	Submitted	SWK US	United States of America	A
Stanley Electric Co., Ltd.	Not submitted	6923 JP	Japan	F
STMicroelectronics International NV	Submitted	STM IM	Switzerland	B
SUBARU CORPORATION	Not submitted	7270 JP	Japan	F
Sumco Corporation	Not submitted	3436 JP	Japan	F
Sumitomo Chemical Co., Ltd.	Submitted	4005 JP	Japan	B

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Sumitomo Electric Industries, Ltd.	Submitted	5802 JP	Japan	C
Sumitomo Heavy Industries. Ltd.	Submitted	6302 JP	Japan	B-
SUNNYLITE TRADING CO., LTD	Submitted	Private company	Taiwan ROC	Not scored
Suzuki Motor Corporation	Submitted	7269 JP	Japan	C
Symrise AG	Submitted	SY1 GR	Germany	B
Syngenta AG	Submitted	SYNN SW	Switzerland	C
Synthomer plc	Submitted	SYNT LN	United Kingdom of Great Britain and Northern Ireland	C
Synthos S.A.	Not submitted	SNS PW	Poland	F
Tadano Ltd	Not submitted	6395 JP	Japan	F
Taiwan Semiconductor Manufacturing	Submitted	2330 TT	Taiwan ROC	B
Taiyo Nippon Sanso Corporation	Submitted (see another)	4091 JP	Japan	Mitsubishi Chemical Holdings Corporation (A-)
Taiyo Yuden Co., Ltd.	Not submitted	6976 JP	Japan	F
TANAX, INC.	Submitted	7781872Z JP	Japan	C
Tata Chemicals	Submitted	TTCH IN	India	B-
Tata Motors	Not submitted	TTMT IN	India	F
TBM,. LTD	Submitted	1556417D JP	Japan	B-
TDK Corporation	Submitted	6762 JP	Japan	D
TE Connectivity	Submitted	TEL US	United States of America	C
Techtronic Industries	Not submitted	669 HK	China, Hong Kong Special Administrative Region	F
Teijin Ltd.	Submitted	3401 JP	Japan	D
Tesla Motors, Inc.	Not submitted	TSLA US	United States of America	F
Texas Instruments Incorporated	Submitted	TXN US	United States of America	C
Textron Inc.	Not submitted	TXT US	United States of America	F
Thales	Not submitted	HO FP	France	F
The Dow Chemical Company	Submitted	DOW US	United States of America	D
The Japan Steel Works, Ltd.	Not submitted	5631 JP	Japan	F
The Mosaic Company	Submitted	MOS US	United States of America	B
THK Co., Ltd.	Submitted	6481 JP	Japan	C
TOFAŞ TÜRK OTOMOBİL FABRİKASI A.Ş.	Submitted	TOASO TI	Turkey	B-
Tokai Rika Co., Ltd.	Submitted	6995 JP	Japan	C
Tokyo Electron Ltd.	Submitted	8035 JP	Japan	B-
Topcon Corp	Not submitted	7732 JP	Japan	F
Toray Industries, Inc.	Submitted	3402 JP	Japan	B
Toshiba Corporation	Submitted	6502 JP	Japan	Not available
Tosoh Corporation	Not submitted	4042 JP	Japan	F
Toto Ltd.	Submitted	5332 JP	Japan	B-
Toyo Seikan Group Holdings, Ltd.	Submitted	5901 JP	Japan	C
Toyoda Gosei	Submitted	7282 JP	Japan	B
Toyota Boshoku Corporation	Submitted	3116 JP	Japan	B
Toyota Industries Corporation	Submitted	6201 JP	Japan	A
Toyota Motor Corporation	Submitted	7203 JP	Japan	Not available
Transdigm Group Incorporated	Not submitted	TDG US	United States of America	F
TS Tech Co.,Ltd.	Submitted	7313 JP	Japan	C
TÜMOSAN MOTOR VE TRAKTÖR SANAYİ A.Ş.	Not submitted	TMSN TI	Turkey	F
TÜRK TRAKTÖR VE ZİRAAT MAKİNELERİ A.Ş.	Not submitted	TTRAK TI	Turkey	F
Ube Industries, Ltd.	Submitted	4208 JP	Japan	Not available
Umw Holdings Bhd	Not submitted	UMWH MK	Malaysia	F

APPENDIX IV: LIST OF COMPANY RESPONSE STATUS AND SCORES

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Uni-Charm Corporation	Submitted	8113 JP	Japan	C
Unilever Indonesia	Submitted (see another)	UNVR IJ	Indonesia	Unilever plc (B)
Unilever Nv Cva	Not submitted	UNA NA	Netherlands	F
Unilever plc	Submitted	ULVR LN	United Kingdom of Great Britain and Northern Ireland	B
United Microelectronics	Submitted	2303 TT	Taiwan ROC	B
United Technologies Corporation	Submitted	UTX US	United States of America	B-
Ushio Inc.	Not submitted	6925 JP	Japan	F
Valeo Sa	Submitted	FR FP	France	Not available
Valspar Corporation	Not submitted	VAL US	United States of America	F
Vestas Wind Systems A/S	Submitted	VWS DC	Denmark	C
VESTEL BEYAZ EŞYA SANAYİ VE TİCARET A.Ş.	Submitted	VESBE TI	Turkey	B-
VESTEL ELEKTRONİK SANAYİ VE TİCARET A.Ş.	Not submitted	VESTL TI	Turkey	F
Volkswagen AG	Submitted	VOW3 GR	Germany	A-
Volvo	Not submitted	VOLVB SS	Sweden	F
W.R. Grace & Co.	Not submitted	GRA US	United States of America	F
Wacker Chemie AG	Submitted	WCH GR	Germany	Not available
Wanhua Chemical Group	Not submitted	600309 CH	China	F
Wärtsilä Corporation	Not submitted	WRT1V FH	Finland	F
WECKERLE	Submitted	6302495Z GR	Germany	Not scored
Weichai Power Co., Ltd.	Not submitted	2338 HK	China	F
Weir Group	Not submitted	WEIR LN	United Kingdom of Great Britain and Northern Ireland	F
Western Digital Corp	Submitted	WDC US	United States of America	B-
WestRock Company	Submitted	WRK US	United States of America	C
Whirlpool Corporation	Submitted	WHR US	United States of America	Not scored
Xilinx Inc	Submitted	XLNX US	United States of America	Not available
Xylem Inc	Submitted	XYL US	United States of America	B
Yamaha Corporation	Submitted	7951 JP	Japan	B-
Yamaha Motor Co., Ltd.	Submitted	7272 JP	Japan	Not available
Yara International ASA	Submitted	YAR NO	Norway	B-
Yaskawa Electric Corporation	Not submitted	6506 JP	Japan	F
YAZICILAR HOLDİNG A.Ş.	Not submitted	YAZIC TI	Turkey	F
Yokogawa Electric Corporation	Submitted	6841 JP	Japan	B
Zeon Corporation	Submitted	4205 JP	Japan	C
Zodiac	Not submitted	ZC FP	France	F
Materials				
Adelaide Brighton	Not submitted	ABC AU	Australia	F
AFYON ÇİMENTO SANAYİ T.A.Ş.	Not submitted	AFYON TI	Turkey	F
AGC Inc.	Submitted	5201 JP	Japan	B
AKÇANSA ÇİMENTO SANAYİ VE TİCARET A.Ş.	Submitted	AKCNS TI	Turkey	C
Alcoa Corp.	Submitted	AA US	United States of America	B-
Altri SGPS SA	Not submitted	ALTR PL	Portugal	F
Alumina	Submitted	AWC AU	Australia	D
Aluminium Bahrain BSC	Not submitted	ALBH BI	Bahrain	F
Ambuja Cements	Submitted	ACEM IN	India	B-
ANADOLU CAM SANAYİ A.Ş.	Not submitted	ANACM TI	Turkey	F
Anhui Conch Cement	Not submitted	914 HK	China	F
Ansell	Submitted	ANN AU	Australia	C
Arcelor Mittal South Africa Ltd	Submitted (see another)	ACL SJ	South Africa	ArcelorMittal (B-)

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
ArcelorMittal	Submitted	MT NA	Luxembourg	B-
Bengang Steel Plates Co. Ltd.	Not submitted	000761 CH	China	F
Bharat Forge	Not submitted	BHFC IN	India	F
BlueScope Steel	Not submitted	BSL AU	Australia	F
Boliden Group	Not submitted	BOL SS	Sweden	F
Boral	Not submitted	BLD AU	Australia	F
BORUSAN MANNESMANN BORU SANAYİ VE TİCARET A.Ş.	Not submitted	BRSAN TI	Turkey	F
Bridgestone Corporation	Submitted	5108 JP	Japan	B
BRİSA BRIDGESTONE SABANCI LASTİK SAN.VE TİC.A.Ş	Submitted	BRISA TI	Turkey	B
Buzzi Unicem	Not submitted	BZU IM	Italy	F
Cameco Corporation	Not submitted	CCO CN	Canada	F
Cementir Holding SpA	Not submitted	CEM IM	Italy	F
Cementos Argos SA	Submitted	CEMARGOS CB	Colombia	B-
CEMEX	Not submitted	CEMEXCPO MM	Mexico	F
Cheng Shin Rubber Industry Company Ltd	Not submitted	2105 TT	Taiwan ROC	F
China National Building Materials Company Limited	Not submitted	3323 HK	China	F
China Steel Corporation	Submitted	2002 TT	Taiwan ROC	B
Cia. Siderurgica Nacional - CSN	Submitted	CSNA3 BZ	Brazil	D
ÇİMSA ÇİMENTO SANAYİ VE TİCARET A.Ş.	Submitted	CIMSA TI	Turkey	B-
Continental AG	Submitted	CON GR	Germany	B-
CRH Plc	Not submitted	CRH ID	Ireland	F
Daido Steel Co., Ltd.	Not submitted	5471 JP	Japan	F
Domtar Corporation	Not submitted	UFS US	Canada	F
Dowa Holdings Co., Ltd.	Not submitted	5714 JP	Japan	F
Duratex S/A	Submitted	DTEX3 BZ	Brazil	A-
Empresas CMPC	Submitted	CMPC CI	Chile	B-
EREĞLİ DEMİR VE ÇELİK FABRİKALARI T.A.Ş.	Not submitted	EREGL TI	Turkey	F
Essity	Submitted	ESSITYB SS	Sweden	B
Evrz PLC	Not submitted	EVR LN	Russian Federation	F
FIBRIA Celulose S/A	Submitted	FIBR3 BZ	Brazil	A-
Freeport-McMoRan Inc.	Submitted	FCX US	United States of America	C
Geberit AG	Submitted	GEBN SW	Switzerland	B-
Gerdau S/A	Not submitted	GGBR4 BZ	Brazil	F
GOODYEAR LASTİKLERİ T.A.Ş.	Not submitted	GOODY TI	Turkey	F
Goodyear Tire & Rubber Company	Submitted	GT US	United States of America	B-
Grupo Argos	Not submitted	GRUPOARG CB	Colombia	F
Grupo Mexico S.A.B. de CV	Not submitted	GMEXICOB MM	Mexico	F
Hankook Tire Co Ltd	Submitted	161390 KS	Republic of Korea	C
HeidelbergCement AG	Submitted	HEI GR	Germany	A-
Hindalco Industries	Not submitted	HNDL IN	India	F
Hindustan Zinc	Submitted	HZ IN	India	B
Hitachi Metals, Ltd.	Submitted	5486 JP	Japan	B-
Holmen	Not submitted	HOLMB SS	Sweden	F
Hyundai Steel Co	Not submitted	004020 KS	Republic of Korea	F
Iberpapel Gestión	Not submitted	IBG SM	Spain	F
Imerys	Not submitted	NK FP	France	F
Italcementi	Submitted (see another)	IT IM	Italy	HeidelbergCement AG (A-)
Ivanhoe Mines	Submitted	IVN CN	Canada	C
James Hardie Industries	Submitted	JHX AU	Ireland	D

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Company	Response Status	Ticker	Country HQ	CDP Water Security Score
JFE Holdings, Inc.	Submitted	5411 JP	Japan	B
JSW Steel	Not submitted	JSTL IN	India	F
KARDEMİR KARABÜK DEMİR ÇELİK SANAYİ VE TİCARET A.Ş.	Not submitted	KRDMD TI	Turkey	F
KAZ Minerals	Submitted	KAZ LN	Kazakhstan	D-
KCC	Not submitted	002380 KS	Republic of Korea	F
Klabin S/A	Submitted	KLBN4 BZ	Brazil	A
Kobe Steel., Ltd.	Submitted	5406 JP	Japan	C
KONYA ÇİMENTO SANAYİİ A.Ş.	Not submitted	KONYA TI	Turkey	F
KORDSA TEKNİK TEKSTİL A.Ş.	Submitted	KORDS TI	Turkey	B-
Korea Zinc Co Ltd	Not submitted	010130 KS	Republic of Korea	F
LafargeHolcim Ltd	Not submitted	LHN SW	Switzerland	F
LIXIL Group Corporation	Submitted	5938 JP	Japan	A
Mahindra Sanyo Special Steel Pvt. Ltd	Submitted	0821582D IN	India	B-
Martin Marietta Materials, Inc.	Not submitted	MLM US	United States of America	F
Maruichi Steel Tube Ltd.	Not submitted	5463 JP	Japan	F
Michelin	Submitted	ML FP	France	B
Miquel Y Costas	Submitted	MCM SM	Spain	B
Mohawk Industries, Inc.	Not submitted	MHK US	United States of America	F
MYTILINEOS Holdings S.A.	Submitted	MYTIL GA	Greece	B-
Nippon Paper Industries Co Ltd	Submitted	3863 JP	Japan	C
Nippon Sheet Glass Company, Ltd	Submitted	5202 JP	Japan	B-
Nippon Steel & Sumitomo Metal Corporation	Submitted	5401 JP	Japan	B-
Nisshin Steel Holdings Co., Ltd.	Not submitted	5413 JP	Japan	F
Nokian Tyres	Submitted	NRE1V FH	Finland	B-
Norsk Hydro	Submitted	NHY NO	Norway	B-
Nucor Corporation	Not submitted	NUE US	United States of America	F
Owens Corning	Submitted	OC US	United States of America	A-
Owens-Illinois	Submitted	OI US	United States of America	B-
PanAust	Submitted	PNA AU	Australia	C
Pirelli	Submitted	PC IM	Italy	B
POSCO	Submitted	005490 KS	Republic of Korea	A-
Resolute Forest Products Inc.	Submitted	RFP US	Canada	B-
Saint-Gobain	Submitted	SGO FP	France	B-
Sappi	Not submitted	SAP SJ	South Africa	F
Sasol Limited	Submitted	SOL SJ	South Africa	Not available
Semapa - Sociedade de Investimento e Gestao SGPS SA	Not submitted	SEM PL	Portugal	F
SeverStal PAO	Not submitted	SVST LI	Russian Federation	F
Shree Cement	Not submitted	SRM IN	India	F
South32	Submitted	S32 AU	Australia	B-
SSAB	Not submitted	SSABA SS	Sweden	F
Stora Enso Oyj	Submitted	STERV FH	Finland	B-
Sumitomo Metal Mining Co., Ltd.	Submitted	5713 JP	Japan	B
Sumitomo Osaka Cement Co., Ltd.	Submitted	5232 JP	Japan	Not scored
Sumitomo Rubber Industries, Ltd.	Submitted	5110 JP	Japan	C
Suzano Papel & Celulose	Not submitted	SUZB3 BZ	Brazil	F
T.ŞİŞE VE CAM FABRİKALARI A.Ş.	Not submitted	SISE TI	Turkey	F
Taiheiyo Cement Corporation	Submitted	5233 JP	Japan	C
Taiwan Cement	Not submitted	1101 TT	Taiwan ROC	F
Tata Steel	Submitted	TATA IN	India	B-
Tenaris S.A.	Not submitted	TEN IM	Luxembourg	F

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Titan Cement	Not submitted	TITK GA	Greece	F
Toyo Tire Corporation	Submitted	5105 JP	Japan	B-
TRAKYA CAM SANAYİİ A.Ş.	Not submitted	TRKCM TI	Turkey	F
Ultratech Cement	Not submitted	UTCEM IN	India	F
United States Steel Corporation	Not submitted	X US	United States of America	F
UPM-Kymmene Corporation	Submitted	UPM FH	Finland	B
Vedanta Resources PLC	Not submitted	VED LN	United Kingdom of Great Britain and Northern Ireland	F
Voestalpine AG	Submitted	VOE AV	Austria	B-
Vulcan Materials Company	Not submitted	VMC US	United States of America	F
West Fraser Timber Co. Ltd.	Not submitted	WFT CN	Canada	F
Yamato Kogyo Co., Ltd.	Not submitted	5444 JP	Japan	F
Yokohama Rubber Company, Limited	Submitted	5101 JP	Japan	B
Mineral Extraction				
Acacia Mining	Not submitted	ACA LN	United Kingdom of Great Britain and Northern Ireland	F
African Rainbow Minerals	Submitted	ARI SJ	South Africa	B
Agnico-Eagle Mines Limited	Submitted	AEM CN	Canada	C
Alacer Gold	Not submitted	AQG AU	Turkey	F
Alamos Gold Inc.	Not submitted	AGI CN	Canada	F
Alrosa Company Ltd	Not submitted	ALRS RM	Russian Federation	F
Anglo American	Submitted	AAL LN	United Kingdom of Great Britain and Northern Ireland	A-
Anglo American Platinum	Submitted	AMS SJ	South Africa	A-
AngloGold Ashanti	Submitted	ANG SJ	South Africa	B-
Antofagasta	Submitted	ANTO LN	United Kingdom of Great Britain and Northern Ireland	C
Assore Ltd	Not submitted	ASR SJ	South Africa	F
Aurubis AG	Not submitted	NDA GR	Germany	F
Beadell Resources	Not submitted	BDR AU	Australia	F
BHP	Not submitted	BHP LN	Australia	F
Centamin plc	Submitted	CEY LN	United Kingdom of Great Britain and Northern Ireland	B-
Coeur d'Alene Mines Corporation	Not submitted	CDE US	United States of America	F
Eldorado Gold Corporation	Submitted	ELD CN	Canada	C
Evolution Mining	Not submitted	EVN AU	Australia	F
First Quantum Minerals Limited	Submitted	FM CN	Canada	B-
Fortescue Metals Group	Not submitted	FMG AU	Australia	F
Fresnillo plc	Submitted	FRES LN	Mexico	C
Gold Fields Limited	Submitted	GFI SJ	South Africa	B
Goldcorp Inc.	Submitted	G CN	Canada	B-
Harmony Gold Mining Co Ltd	Submitted	HAR SJ	South Africa	B
HudBay Minerals Inc.	Submitted	HBM CN	Canada	C
IAMGOLD Corporation	Submitted	IMG CN	Canada	C
Iluka Resources	Not submitted	ILU AU	Australia	F
Impala Platinum Holdings	Submitted	IMP SJ	South Africa	Not available
Independence Group	Submitted	IGO AU	Australia	Not scored
K + S AG	Submitted	SDF GR	Germany	C
KGHM Polska Miedź S.A.	Not submitted	KGH PW	Poland	F
Kingsgate Consolidated	Not submitted	KCN AU	Australia	F
Kinross Gold Corporation	Not submitted	K CN	Canada	F
KOZA ALTIN İŞLETMELERİ A.Ş.	Not submitted	KOZAL TI	Turkey	F

APPENDIX IV: LIST OF COMPANY RESPONSE STATUS AND SCORES

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Kumba Iron Ore	Submitted	KIO SJ	South Africa	B-
Lonmin	Submitted	LMI LN	South Africa	A-
Medusa Mining	Not submitted	MML AU	Australia	F
Mitsubishi Materials Corporation	Submitted	5711 JP	Japan	C
MMC Norilsk Nickel OSJC	Not submitted	GMKN RM	Russian Federation	F
New Gold Inc.	Not submitted	NGD CN	Canada	F
Newcrest Mining	Submitted	NCM AU	Australia	Not scored
Newmont Mining Corporation	Submitted	NEM US	United States of America	B
Northam Platinum Ltd	Submitted	NHM SJ	South Africa	B-
Petropavlovsk Plc	Not submitted	POG LN	Russian Federation	F
Polyus PJSC	Not submitted	PGIL LN	Russian Federation	F
Ramelius Resources	Not submitted	RMS AU	Australia	F
Randgold Resources	Submitted	RRS LN	United Kingdom of Great Britain and Northern Ireland	B-
Resolute Mining	Not submitted	RSG AU	Australia	F
Rio Tinto	Not submitted	RIO AU	United Kingdom of Great Britain and Northern Ireland	F
Royal Bafokeng Platinum Ltd	Submitted	RBP SJ	South Africa	B
Sandfire Resources NL	Submitted	SFR AU	Australia	C
Saracen Mineral Holdings	Submitted	SAR AU	Australia	C
Sibanye Stillwater	Not submitted	SGL SJ	South Africa	F
Silver Lake Resources	Not submitted	SLR AU	Australia	F
Southern Copper Corporation	Not submitted	SCCO US	United States of America	F
Teck Resources Limited	Submitted	TECK/A CN	Canada	B-
Troy Resources	Not submitted	TRY AU	Australia	F
Vale	Submitted	VALE3 BZ	Brazil	C
Vedanta Ltd	Not submitted	VEDL IN	India	F
Zijin Mining Group Co., Ltd	Not submitted	601899 CH	China	F
Power Generation				
A2A	Submitted	A2A IM	Italy	B-
AGL Energy	Not submitted	AGL AU	Australia	F
AKENERJİ ELEKTRİK ÜRETİM A.Ş.	Submitted	AKENR TI	Turkey	B-
AKSA ENERJİ ÜRETİM A.Ş.	Not submitted	AKSEN TI	Turkey	F
Alliant Energy Corporation	Not submitted	LNT US	United States of America	F
American Electric Power Company, Inc.	Submitted	AEP US	United States of America	B-
Calpine Corporation	Not submitted	CPN US	United States of America	F
Centrica	Submitted	CNA LN	United Kingdom of Great Britain and Northern Ireland	B-
CEZ	Not submitted	CEZ CP	Czechia	F
CGN Power Co H	Not submitted	1816 HK	China, Hong Kong Special Administrative Region	F
China Power International Development Limited	Not submitted	2380 HK	China, Hong Kong Special Administrative Region	F
China Resources Power Holdings Company Limited	Not submitted	836 HK	China	F
Chubu Electric Power Co., Inc.	Not submitted	9502 JP	Japan	F
CLP Holdings Limited	Submitted	2 HK	China, Hong Kong Special Administrative Region	B-
CMS Energy Corporation	Submitted	CMS US	United States of America	B-
Dominion Energy	Submitted	D US	United States of America	B
Drax Group	Not submitted	DRX LN	United Kingdom of Great Britain and Northern Ireland	F
DTE Energy Company	Submitted	DTE US	United States of America	C
Duke Energy Corporation	Submitted	DUK US	United States of America	B-

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
EDF	Submitted	EDF FP	France	C
Edison International	Not submitted	EIX US	United States of America	F
EDP - Energias de Portugal S.A.	Submitted	EDP PL	Portugal	B
Electric Power Development Co.,Ltd (J-POWER)	Not submitted	9513 JP	Japan	F
EnBW Energie Baden-Württemberg AG	Not submitted	EBK GR	Germany	F
Endesa	Submitted	ELE SM	Spain	B
ENGIE	Submitted	ENGI FP	France	B-
ENKA İNŞAAT VE SANAYİ A.Ş.	Submitted	ENKAI TI	Turkey	B-
Entergy Corporation	Not submitted	ETR US	United States of America	F
Evergy, Inc.	Not submitted	EVRG US	United States of America	F
Exelon Corporation	Submitted	EXC US	United States of America	A-
Fortum Oyj	Submitted	FORTUM FH	Finland	Not scored
GS EPS	Not submitted	015740 KS	Republic of Korea	F
HK Electric Investments	Submitted	2638 HK	China, Hong Kong Special Administrative Region	Not scored
Hokkaido Electric Power Co., Inc.	Not submitted	9509 JP	Japan	F
Hokuriku Electric Power Company	Not submitted	9505 JP	Japan	F
Huadian Power International Corporation Limited	Not submitted	1071 HK	China	F
Huaneng Power International	Not submitted	902 HK	China	F
Iberdrola SA	Submitted	IBE SM	Spain	Not available
Korea District Heating Corp.	Not submitted	071320 KS	Republic of Korea	F
Korea East-West Power	Not submitted	KEWSP0 KS	Republic of Korea	F
Kyushu Electric Power Co Inc	Submitted	9508 JP	Japan	B-
NextEra Energy, Inc.	Not submitted	NEE US	United States of America	F
NRG Energy Inc	Submitted	NRG US	United States of America	B
NTPC Ltd	Not submitted	NTPC IN	India	F
OGE Energy Corp.	Not submitted	OGE US	United States of America	F
Origin Energy	Submitted	ORG AU	Australia	C
Pinnacle West Capital Corporation	Submitted	PNW US	United States of America	B-
Polska Grupa Energetyczna (PGE) SA	Not submitted	PGE PW	Poland	F
RusHydro JSC	Not submitted	HYDR RM	Russian Federation	F
RWE AG	Submitted	RWE GR	Germany	C
SCANA Corporation	Not submitted	SCG US	United States of America	F
Shikoku Electric Power Co., Inc.	Not submitted	9507 JP	Japan	F
SSE	Submitted	SSE LN	United Kingdom of Great Britain and Northern Ireland	B-
Tata Power Co	Not submitted	TPWR IN	India	F
Tenaga Nasional	Not submitted	TNB MK	Malaysia	F
The Chugoku Electric Power Company	Not submitted	9504 JP	Japan	F
The Kansai Electric Power Co., Inc.	Not submitted	9503 JP	Japan	F
The Southern Company	Not submitted	SO US	United States of America	F
The Tokyo Electric Power Company Holdings, Inc (TEPCO)	Submitted	9501 JP	Japan	B
Tohoku Electric Power Co., Inc.	Not submitted	9506 JP	Japan	F
WEC Energy Group	Submitted	WEC US	United States of America	C
Westar Energy, Inc.	Not submitted	WR US	United States of America	F
Xcel Energy Inc.	Not submitted	XEL US	United States of America	F
YTL Corp	Not submitted	YTL MK	Malaysia	F
ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.	Submitted	3328393Z TI	Turkey	B-
ZORLU ENERJİ ELEKTRİK ÜRETİM A.Ş.	Submitted	ZOREN TI	Turkey	B-
Retail				
ABC-Mart, Inc.	Not submitted	2670 JP	Japan	F

APPENDIX IV: LIST OF COMPANY RESPONSE STATUS AND SCORES

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Adastria Co., Ltd.	Not submitted	2685 JP	Japan	F
Aeon Co., Ltd.	Submitted	8267 JP	Japan	Not scored
Ahold Delhaize	Submitted	AD NA	Netherlands	C-
Ain Holdings Inc	Not submitted	9627 JP	Japan	F
Alimentation Couche-Tard Inc.	Not submitted	ATD/A CN	Canada	F
Anta Sports Products Ltd	Not submitted	2020 HK	China, Hong Kong Special Administrative Region	F
Aoyama Trading Co., Ltd.	Not submitted	8219 JP	Japan	F
Associated British Foods	Submitted	ABF LN	United Kingdom of Great Britain and Northern Ireland	C
Astra International	Not submitted	ASII IJ	Indonesia	F
Belle International	Not submitted	1880 HK	China, Hong Kong Special Administrative Region	F
Best Buy Co., Inc.	Submitted	BBY US	United States of America	C
BGF	Not submitted	027410 KS	Republic of Korea	F
Bic Camera Inc	Submitted	3048 JP	Japan	D
Bidvest Group Ltd	Not submitted	BVT SJ	South Africa	F
BİM BİRLEŞİK MAĞAZALAR A.Ş.	Not submitted	BIMAS TI	Turkey	F
Canadian Tire Corporation, Limited	Not submitted	CTC CN	Canada	F
Carrefour	Not submitted	CA FP	France	F
CARREFOURSA CARREFOUR SABANCI TİCARET MERKEZİ A.Ş.	Not submitted	CRFSA TI	Turkey	F
CCC	Not submitted	CCC PW	Poland	F
Cencosud SA	Not submitted	CENCOSUD CI	Chile	F
Clicks Group Ltd	Submitted	CLS SJ	South Africa	B
Colruyt	Not submitted	COLR BB	Belgium	F
COSMOS Pharmaceutical Corporation	Not submitted	3349 JP	Japan	F
Costco Wholesale Corporation	Not submitted	COST US	United States of America	F
CP ALL Pcl	Not submitted	CPALL TB	Thailand	F
DIA	Not submitted	DIA SM	Spain	F
Dick's Sporting Goods, Inc.	Not submitted	DKS US	United States of America	F
Dixons Carphone	Not submitted	DC/ LN	United Kingdom of Great Britain and Northern Ireland	F
Dollar General Corporation	Not submitted	DG US	United States of America	F
Dollar Tree Inc	Not submitted	DLTR US	United States of America	F
Dollarama Inc	Not submitted	DOL CN	Canada	F
Don Quijote Holdings Co., Ltd.	Not submitted	7532 JP	Japan	F
E-MART Co., Ltd	Not submitted	139480 KS	Republic of Korea	F
Empire Company Limited	Not submitted	EMP/A CN	Canada	F
FamilyMart UNY Holdings Co., Ltd.	Not submitted	8028 JP	Japan	F
Fast Retailing Co., Ltd.	Submitted	9983 JP	Japan	C
FF Group (Folli Follie)	Not submitted	FFGRP GA	Greece	F
Foot Locker Inc	Not submitted	FL US	United States of America	F
Foschini Group Ltd	Submitted	TFG SJ	South Africa	Not scored
Gap Inc.	Submitted	GPS US	United States of America	A
Genuine Parts Company	Not submitted	GPC US	United States of America	F
George Weston Limited	Submitted	WN CN	Canada	C
Grupo Carso S.A.	Not submitted	GCARSOA1 MM	Mexico	F
H&M Hennes & Mauritz AB	Submitted	HMB SS	Sweden	C
H2O Retailing Corporation	Not submitted	8242 JP	Japan	F
Hotel Shilla Co., Ltd.	Not submitted	008770 KS	Republic of Korea	F
HUGO BOSS AG	Not submitted	BOSS GR	Germany	F
ICA Gruppen	Not submitted	ICA SS	Sweden	F

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Inditex	Submitted	ITX SM	Spain	B
Izumi Co., Ltd.	Not submitted	8273 JP	Japan	F
J Sainsbury Plc	Submitted	SBRY LN	United Kingdom of Great Britain and Northern Ireland	A-
J. Front Retailing Co., Ltd.	Not submitted	3086 JP	Japan	F
Jardine Matheson	Not submitted	JM SP	China, Hong Kong Special Administrative Region	F
Jardine Strategic	Not submitted	JS SP	China, Hong Kong Special Administrative Region	F
Jean Coutu Group Inc	Not submitted	PJC/A CN	Canada	F
Jerónimo Martins SGPS SA	Not submitted	JMT PL	Portugal	F
Kroger	Submitted	KR US	United States of America	Not scored
Kusuri No Aoki Holdings	Not submitted	3549 JP	Japan	F
L Brands, Inc.	Not submitted	LB US	United States of America	F
Lawson, Inc.	Not submitted	2651 JP	Japan	F
Loblaw Companies Limited	Not submitted	L CN	Canada	F
Lojas Renner S.A.	Not submitted	LREN3 BZ	Brazil	F
Lotte Shopping	Not submitted	023530 KS	Republic of Korea	F
Lowe's Companies, Inc.	Submitted	LOW US	United States of America	Not available
LPP S.A.	Not submitted	LPP PW	Poland	F
Lululemon Athletica Inc.	Not submitted	LULU US	Canada	F
Magnit	Not submitted	MGNT RM	Russian Federation	F
Marks and Spencer Group plc	Not submitted	MKS LN	United Kingdom of Great Britain and Northern Ireland	F
Massmart Holdings Ltd	Not submitted	MSM SJ	South Africa	F
Matsumotokiyoshi Holdings Co., Ltd.	Not submitted	3088 JP	Japan	F
Metro Inc.	Not submitted	MRU CN	Canada	F
Michael Kors Holdings Ltd	Not submitted	CPRI US	United States of America	F
MİGROS TİCARET A.Ş.	Submitted	MGROS TI	Turkey	B
Mr Price Group Ltd	Not submitted	MRP SJ	South Africa	F
Next	Not submitted	NXT LN	United Kingdom of Great Britain and Northern Ireland	F
Nitori Holdings Co., Ltd.	Not submitted	9843 JP	Japan	F
Pick 'n Pay Stores Ltd	Submitted	PIK SJ	South Africa	B
Polo Ralph Lauren Corporation	Not submitted	RL US	United States of America	F
President Chain Store Corp	Not submitted	2912 TT	Taiwan ROC	F
Raia Drogasil SA	Submitted	RADL3 BZ	Brazil	D
Rite Aid Corp	Not submitted	RAD US	United States of America	F
Ross Stores Inc	Not submitted	ROST US	United States of America	F
Ryohin Keikaku Co., Ltd.	Not submitted	7453 JP	Japan	F
Seria Co Ltd	Not submitted	2782 JP	Japan	F
Seven & I Holdings Co., Ltd.	Not submitted	3382 JP	Japan	F
Shimamura Co., Ltd.	Not submitted	8227 JP	Japan	F
Shinsegae	Not submitted	004170 KS	Republic of Korea	F
Shoprite Holdings Ltd	Submitted	SHP SJ	South Africa	Not available
SM Investments	Submitted	SM PM	Philippines	D
Staples, Inc.	Not submitted	SPLS US	United States of America	F
Steinhoff International Holdings	Not submitted	SNH SJ	South Africa	F
Sugi Holdings Co., Ltd.	Not submitted	7649 JP	Japan	F
Sun Art Retail Group Ltd	Not submitted	6808 HK	China, Hong Kong Special Administrative Region	F
Sundrug Co., Ltd.	Not submitted	9989 JP	Japan	F
Tapestry Inc	Submitted	TPR US	United States of America	C

APPENDIX IV: LIST OF COMPANY RESPONSE STATUS AND SCORES

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Target Corporation	Submitted	TGT US	United States of America	D
Tesco	Not submitted	TSCO LN	United Kingdom of Great Britain and Northern Ireland	F
TESCO KİPA	Not submitted	KIPA TI	Turkey	F
The Spar Group Ltd	Submitted	SPP SJ	South Africa	B-
Tiffany & Co.	Not submitted	TIF US	United States of America	F
TJX Companies, Inc.	Not submitted	TJX US	United States of America	F
Truworths International	Not submitted	TRU SJ	South Africa	F
Tsuruha Holdings Inc.	Submitted	3391 JP	Japan	Not scored
Urban Outfitters, Inc.	Not submitted	URBN US	United States of America	F
Wal Mart de Mexico	Submitted	WALMEX* MM	Mexico	B-
Walgreens Boots Alliance	Not submitted	WBA US	United States of America	F
Wal-Mart Stores, Inc.	Submitted	WMT US	United States of America	C
Welcia Holdings Co Ltd	Not submitted	3141 JP	Japan	F
Wesfarmers	Not submitted	WES AU	Australia	F
Whole Foods Market, Inc.	Not submitted	WFM US	United States of America	F
WM Morrison Supermarkets Plc	Submitted	MRW LN	United Kingdom of Great Britain and Northern Ireland	D
Woolworths Holdings Ltd	Submitted	WHL SJ	South Africa	B-
Woolworths Limited	Not submitted	WOW AU	Australia	F
Services				
Akamai Technologies Inc	Submitted	AKAM US	United States of America	C-
ALBARAKA TÜRK KATILIM BANKASI A.Ş.	Submitted	ALBRK TI	Turkey	C
Alfa Chemicals Ltd	Submitted	1409858Z LN	United Kingdom of Great Britain and Northern Ireland	Not scored
Aluminum Corporation of China	Not submitted	2600 HK	China	F
Arrow Electronics Inc.	Submitted	ARW US	United States of America	C
Autobacs Seven Co., Ltd.	Not submitted	9832 JP	Japan	F
Avnet Inc.	Submitted	AVT US	United States of America	D
Banco Santander	Submitted	SAN SM	Spain	C
BANDAI NAMCO Holdings Inc.	Submitted	7832 JP	Japan	D
Bank of America	Submitted	BAC US	United States of America	A-
Barloworld	Submitted	BAW SJ	South Africa	C
CA Technologies	Not submitted	CA US	United States of America	F
Caixa Econômica Federal	Submitted	CEFN3 BZ	Brazil	D
CITIC Limited	Not submitted	267 HK	China, Hong Kong Special Administrative Region	F
Coway Co Ltd	Submitted	021240 KS	Republic of Korea	B-
Dell Technologies	Submitted	DVMT US	United States of America	C
E.Sun Financial Holding Co	Submitted	2884 TT	Taiwan ROC	B
Ecolab Inc.	Submitted	ECL US	United States of America	B
Far Eastern New Century Corporation	Not submitted	1402 TT	Taiwan ROC	F
First Financial Holding Co	Submitted	2892 TT	Taiwan ROC	B
Fletcher Building	Submitted	FBU NZ	New Zealand	C
Fujitsu Limited	Submitted	6702 JP	Japan	B
Grupo Televisa S.A.	Submitted	TLEVICPO MM	Mexico	D
GS Holdings Corp	Not submitted	078930 KS	Republic of Korea	F
Haier Electronics Group Co Ltd	Submitted	1169 HK	China	Not scored
Hyprop Investments Ltd	Submitted	HYP SJ	South Africa	Not scored
Imperial Holdings	Not submitted	IPL SJ	South Africa	F
International Business Machines (IBM)	Submitted	IBM US	United States of America	C
ITOCHU Corporation	Submitted	8001 JP	Japan	B-

Company	Response Status	Ticker	Country HQ	CDP Water Security Score
Jacobs Engineering Group Inc.	Not submitted	JEC US	United States of America	F
LG	Not submitted	003550 KS	Republic of Korea	F
Li & Fung Limited	Not submitted	494 HK	China, Hong Kong Special Administrative Region	F
Microsoft Corporation	Submitted	MSFT US	United States of America	A
Mitsui & Co., Ltd.	Submitted	8031 JP	Japan	B-
Nagase & Co., Ltd.	Submitted	8012 JP	Japan	C
NEC Corporation	Submitted	6701 JP	Japan	B
Pearson	Submitted	PERSON LN	United Kingdom of Great Britain and Northern Ireland	C
Redefine Properties Ltd	Submitted	RDF SJ	South Africa	B-
RELX Group Plc	Submitted	REL LN	United Kingdom of Great Britain and Northern Ireland	Not available
Reunert	Submitted	RLO SJ	South Africa	C
Sanlam	Submitted	SLM SJ	South Africa	C
Secom Co., Ltd.	Submitted	9735 JP	Japan	C
Sega Sammy Holdings Inc.	Submitted	6460 JP	Japan	D
ŞEKERBANK T.A.Ş.	Submitted	SKBNK TI	Turkey	B-
Seven Group Holdings	Not submitted	SVW AU	Australia	F
SK Chemicals	Not submitted	006120 KS	Republic of Korea	F
Sojitz Corporation	Submitted	2768 JP	Japan	Not scored
Standard Bank Group	Submitted	SBK SJ	South Africa	Not available
Sumitomo Corporation	Submitted	8053 JP	Japan	B
Symantec Corporation	Submitted	SYMC US	United States of America	C
T.GARANTİ BANKASI A.Ş.	Submitted	GARAN TI	Turkey	B-
Tech Mahindra	Submitted	TECHM IN	India	B
thyssenkrupp AG	Submitted	TKA GR	Germany	C
Toppan Printing Co., Ltd.	Submitted	7911 JP	Japan	C
Toyota Tsusho Corporation	Submitted	8015 JP	Japan	B
Travis Perkins	Submitted	TPK LN	United Kingdom of Great Britain and Northern Ireland	C
TÜRKİYE HALK BANKASI A.Ş.	Submitted	HALKB TI	Turkey	B-
YAPI VE KREDİ BANKASI A.Ş.	Submitted	YKBANK TI	Turkey	B
Zardoya Otis	Not submitted	ZOT SM	Spain	F
Transportation Services				
Carnival Corporation	Submitted	CCL LN	United Kingdom of Great Britain and Northern Ireland	B-
CJ	Not submitted	001040 KS	Republic of Korea	F
CJ Cheiljedang	Submitted	097950 KS	Republic of Korea	B-
FGV Holdings Berhad	Not submitted	FGV MK	Malaysia	F
H.I.S.Co.,Ltd.	Not submitted	9603 JP	Japan	F
KAP Industrial Holdings Ltd	Not submitted	KAP SJ	South Africa	F
Keihan Electric Railway Co., Ltd.	Not submitted	9045 JP	Japan	F
KORAIL RAILROAD Corp.	Submitted	KORAILZ KS	Republic of Korea	D
Nankai Electric Railway Co., Ltd.	Submitted	9044 JP	Japan	A-
National Express Group Plc	Submitted	NEX LN	United Kingdom of Great Britain and Northern Ireland	C
TAV HAVALİMANLARI HOLDİNG A.Ş.	Submitted	TAVHL TI	Turkey	C
Transnet	Submitted	4113058Z CI	South Africa	C
TUI Group	Not submitted	TUI LN	Germany	F
Union Pacific Corporation	Submitted	UNP US	United States of America	Not available

APPENDIX V: INVESTOR SIGNATORIES AND MEMBERS

Key:

2018 Water members in blue and bold

3Sisters Sustainable Management LLC

AB

AberdeenStandard Investments

ABRAPP - Associação Brasileira das Entidades Fechadas de Previdência

Complementar

Achmea BV

ACTIAM

Active Earth Investment Management

Addenda Capital Inc.

Aegon

AGF Investment Inc.

AIG

AKBANK T.A.Ş.

Aktia Bank

Alberta Investment Management Corporation (AIMCo)

Alberta Teachers Retirement Fund

Alecta

Align Impact LLC

Allianz Global Investors

Allianz Group

Alquity Investment Management Ltd

Altira Group

Amalgamated Bank

AMF

AMP Capital Investors

Amundi AM

ANBIMA – Associação Brasileira das Entidades dos Mercados Financeiro e de Capitais

Antera Gestão de Recursos S.A.

APG Asset Management NV

Appleseed Fund

Aquila Capital

Arabesque Asset Management

Arisaig Partners

Arjuna Capital

Armstrong Asset Management

ASM Administradora de Recursos S.A.

Assicurazioni Generali Spa

ATI Asset Management

Atlantic Asset Management Pty Ltd

ATP Group

Auriel Capital Limited

Ausbil Investment Management

Australia and New Zealand Banking Group

Australian Ethical Investment

AustralianSuper

Avaron Asset Management AS

avesco Financial Services AG

Aviva Investors

Aviva plc

AXA Group

AXA Investment Managers

Baillie Gifford & Co.

BaltCap

Banco Bradesco S/A

Banco BTG Pactual SA

Banco do Brasil S/A

Banco Popular Espanol S.A.

Banco Santander

Banesprev – Fundo Banespa de Seguridade Social

Bank J. Safra Sarasin AG

Bank of America

Bank of Montreal

Bank of Nova Scotia (Scotiabank)

Bankhaus Schelhammer & Schattera AG

Bankinter

Barclays

Barncancerfonden

BASF Sociedade de Previdência Complementar

Basler Kantonalbank

Baumann and Partners S.A.

Bayern LB

BayernInvest Kapitalverwaltungsgesellschaft mbH

BBC Pension Trust Ltd

BBVA

Becker College

Bedfordshire Pension Fund

Beetle Capital

Bendigo and Adelaide Bank

Berti Investments

BlackRock

Bluebay Asset Management LLP

Blumenthal Foundation

BM&FBOVESPA

BMO Global Asset Management

BNP Paribas Investment Partners

BNY Mellon

BNY Mellon Service Kapitalanlage-Gesellschaft mbH

Boardwalk Capital Management

Boston Common Asset Management, LLC

Brasilprev Seguros e Previdência S/A.

Breckinridge Capital Advisors

British Airways Pensions

British Columbia Investment Management Corporation

Brown Advisory

BSW Wealth Partners

BT Financial Group

BT Investment Management

CAAT Pension Plan

CAI Corporate Assets International AG

Caisse de dépôt et placement du Québec

Caisse des Dépôts

Caixa Econômica Federal

Caixa Geral de Depósitos

CaixaBank

Caja Ingenieros Gestión, SGIC

California Public Employees' Retirement System (CalPERS)

California State Teachers' Retirement System (CalSTRS)

California State University, Northridge Foundation

Calvert Investment Management, Inc**Canada Pension Plan Investment Board (CPPIB)**

Canadian Labour Congress Staff Pension Fund

Candriam Investors Group

CAPESESP

Capital Innovations, LLC

Capricorn Investment Group

CareSuper

Carnegie Fonder

Cathay Financial Holding

Catherine Donnelly Foundation

Catholic Super

CBF Church of England Funds

CBRE Group, Inc.

CCLA Investment Management Ltd

Celeste Funds Management

Central Finance Board of the Methodist Church

Change Investment Management

China Development Financial Holdings

Christian Brothers Investment Services Inc.

Christian Super

Christopher Reynolds Foundation

Church Commissioners for England

Church Investment Group

Church of England Pensions Board

CI Mutual Funds' Signature Global Advisors

Cleantech Invest AG

ClearBridge Investments

CM-CIC Asset Management

CNP Assurances

Colorado College

Columbia Threadneedle Investments

Comerica Incorporated

Comgest

Comite syndical national de retraite Bâtirente

Commerzbank AG

Commonwealth Superannuation Corporation

Compton Foundation, Inc.

Confluence Capital Management LLC

Connecticut Retirement Plans and Trust Funds

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Deutsche Bank AG

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DNB ASA

DNR Capital

Domini Impact Investments LLC

DoubleDividend Management BV

DWS Investments

DZ Bank

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East Sussex Pension Fund

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Edmond de Rothschild Asset Management

Edward W. Hazen Foundation

EGAMO

Ekobanken - Din Medlemsbank

Elan Capital Partners

ELETRA - Fundação Celg de Seguros e Previdência

Elo Mutual Pension Insurance Company

Environment Agency Pension fund

Environmental Investment Services Asia

Episcopal Diocese of Massachusetts

Epworth Investment Management

eQ Asset Management Ltd

equinet Bank AG

Essex Investment Management Company, LLC

Ethos Foundation**Etica SGR****Eurizon Capital SGR S.p.A.**

Evangelical Lutheran Church in Canada Pension Plan for Clergy and Lay Workers

Evangelical Lutheran Foundation of Eastern Canada

Evangelisch-Luth. Kirche in Bayern

Evli Bank Plc

FACEB – Fundação de Previdência dos Empregados da CEB

FAELCE – Fundacao Coelce de Seguridade Social

FAPERS- Fundação Assistencial e Previdenciária da Extensão Rural do Rio Grande do Sul

Federal Finance

FIDURA Private Equity Fonds

FIM Asset Management Ltd

FIM Services

Finance S.A.

Financiere de l'Echiquier

FIPECq - Fundação de Previdência Complementar dos Empregados e Servidores da FINEP, do IPEA, do CNPq

First Affirmative Financial Network

First Financial Holding Co

First State Superannuation Scheme

APPENDIX V: INVESTOR SIGNATORIES AND MEMBERS

First Swedish National Pension Fund (AP1)
 Folketrygdfondet
 Folksam
 Fondation de Luxembourg
 Fondo Pegaso
 Fondo Pensione Cometa
 Fonds de Réserve pour les Retraites – FRR
 Fonds de Solidarité FTQ
 Formuesforvaltning Aktiv Forvaltning AS
 Foundation North
 Fourth Swedish National Pension Fund, (AP4)
 FRANKFURT-TRUST Investment Gesellschaft mbH
 Friends Fiduciary Corporation
 Fubon Financial Holdings
 Fukoku Capital Management Inc
 FUNCEF - Fundação dos Economistas Federais
 Fundação AMPLA de Seguridade Social - Brasileiros
 Fundação Corsan - dos Funcionários da Companhia Riograndense de Saneamento
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 Fundação Itaúsa Industrial
 FUNDAÇÃO SANEPAR DE PREVIDENCIA E ASSISTENCIA SOCIAL FUSAN
 Fundação Vale do Rio Doce de Seguridade Social - VALIA
 Fundação Viva de Previdência
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 GameChange Capital LLC
 GCA Investment Management
 Gemway Assets
Generation Investment Management
 Genus Capital Management
 German Equity Trust AG
 Global Forestry Capital S.a.r.l.
 Globalance Bank
 GLS Gemeinschaftsbank eG
GMO LLC
Goldman Sachs Asset Management

GOOD GROWTH INSTITUT für globale Vermögensentwicklung mbH
 Good Super
 Great Lakes Advisors
 Greater Manchester Pension Fund
 Green Alpha Advisors
 Green Cay Asset Management
 Green Century Capital Management
 Green Science Partners
 Group La Française
 GROUPAMA EMEKLİLİK A.Ş.
 GROUPAMA SİGORTA A.Ş.
 GROUPE OFI AM
 Grupo Financiero Banorte SAB de CV
 Grupo Santander Brasil
 Guardians of New Zealand Superannuation
 Hana Financial Group
 Hang Seng Bank
 Hannon Armstrong Sustainable Infrastructure Capital, Inc
 Harbour Asset Management
 Harrington Investments, Inc
 Harvard Management Company
 Hazel Capital LLP
 HDFC Bank Ltd
 Healthcare of Ontario Pension Plan (HOOPP)
 Heart of England Baptist Association
 Helaba Invest Kapitalanlagegesellschaft mbH
Hermes Fund Managers
 HESTA
 HIP Investor INC.
 Holden & Partners
 HSBC Global Asset Management (Deutschland) GmbH
 HSBC Global Asset Management (UK)
HSBC Holdings plc
 HSBC INKA Internationale Kapitalanlagegesellschaft mbH
 Humanis
 IDBI Bank Ltd
 IDFC Ltd

IFM Investors
 Iguana Investimentos
 Ilmarinen Mutual Pension Insurance Company
 Impax Asset Management Group plc
 Indusind Bank
 Industrial Alliance Insurance and Financial Services Inc.
 ING Group
 Insight Investment Management (Global) Ltd
 Instituto Sebrae De Seguridade Social - SEBRAEPREV
 Insurance Australia Group
 Integral Investimentos
 Integre Wealth Management of Raymond James
 Interfaith Center on Corporate Responsibility (ICCR)
 IntReal KAG
 Invesco Asset Management
 Investec plc
 Investing for Good
 Irish Life Investment Managers
 Itaú Asset Management
 Itaú Unibanco Holding S.A.
 Jantz Management LLC
Janus Henderson Investors
 Jarislowsky Fraser Limited
 Jessie Smith Noyes Foundation
 Jesuits in Britain
 JLens Investor Network
 Johnson Private Wealth Management
 Joule Assets Inc.
 JPMorgan Chase & Co.
 Jubitz Family Foundation
 Jupiter Asset Management
 Kagiso Asset Management
 Kames Capital
 KBI Global Investors
 KCPS and Company
 Kendall Sustainable Infrastructure, LLC

Kepler Cheuvreux

KEVA

KeyCorp

KfW Bankengruppe

KLP

KPA Pension

La Banque Postale Asset Management

La Financiere Responsable

Laird Norton Family Foundation

Landsorganisationen i Sverige

Länsförsäkringar

LaSalle Investment Management

LBBW Asset Management
Investmentgesellschaft mbH

Legal and General Investment Management

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LGT Capital Partners

Light Green Advisors, LLC

Limestone Investment Management

Liontrust Asset Management PLC

Living Planet Fund Management Company
S.A.

Local Authority Pension Fund Forum

LocalTapiola Asset Management Ltd

LOGOS PORTFÖY YÖNETİMİ A.Ş.

Lombard Odier

London Pensions Fund Authority

Lothian Pension Fund

LUCRF Super Ludgate Investments Limited

Lutheran Council of Great Britain

Macquarie Group

Magellan Financial Group

MagNet Magyar Közösségi Bank Zrt.

Maine Public Employees Retirement System

MAMA Sustainable Incubation AG

Manulife Asset Management

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Mellon Capital Management

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Mercer

Merck Family Fund

Mercy Investment Services, Inc.

Mergence Africa Investments (Pty) Limited

Merseyside Pension Fund

Metrus – Instituto de Seguridade Social

Metzler Asset Management GmbH

MFS Investment Management

Miller/Howard Investments

Mirabaud Asset Management

Missionary Oblates of Mary Immaculate

Mistra, The Swedish Foundation for Strategic
Environmental Research

Mitsubishi UFJ Financial Group, Inc.

Mizuho Financial Group, Inc.

MN

Mobimo

Moneta Asset Management

Mongeral Aegon Seguros e Previdência S.A.

Montanaro Asset Management Limited

Morgan Stanley

MP Investment Management A/S

MS&AD Insurance Group Holdings, Inc.

Nanuk Asset Management

Nathan Cummings Foundation, The

National Australia Bank

National Bank of Canada

National Grid UK Pension Scheme

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Needmor Fund

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New York City Comptroller on behalf of the
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OMERS Administration Corporation

Ontario Teachers' Pension Plan

OP Wealth Management

APPENDIX V: INVESTOR SIGNATORIES AND MEMBERS

Oppenheim Fonds Trust GmbH
Opplysningsvesenets fond (The Norwegian Church Endowment)
OPSEU Pension Trust (OP Trust)
Osmosis Investment Management
Overlook Investments Limited
P+(DIP/JØP)
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PCJ Investment Counsel Ltd.
Pension Protection Fund
PensionDanmark
Pensionskasse Stadt Zürich
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PGGM
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PHITRUST
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Pioneer Investments
Piraeus Bank
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PNC Financial Services Group, Inc.
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PREVHAB PREVIDÊNCIA COMPLEMENTAR
PREVI Caixa de Previdência dos Funcionários do Banco do Brasil
PREVIG Sociedade de Previdência Complementar
Previnorte - Fundação de Previdência Complementar
Priests of the Sacred Heart, US Province

Progressive Asset Management, Inc.
Prologis
Province of St. Joseph of the Capuchin Order
Provinzial Rheinland Holding
Prudential PLC
PSP Investments
QBE Insurance Group
QIC
Quotient Investors LLC
Rabobank Group
Raiffeisen Fund Management Hungary Ltd.
Raiffeisen Kapitalanlage-Gesellschaft m.b.H.
Railpen Investments
RAM Active Investments
Rathbone Greenbank Investments
RBC Global Asset Management
Real Grandeza Fundação de Previdência e Assistência Social
REI Super
Reliance Capital Ltd
Resona Bank, Limited
Rhode Island General Treasurer
River Twice Capital Advisors, LLC
Robeco
RobecoSAM AG
Robert & Patricia Switzer Foundation
Rockefeller Asset Management
Rose Foundation for Communities and the Environment
Rothschild & Co
Rothschild Martin Maurel Asset Management
Royal London Asset Management
Ruffer LLP
Russell Investments
Sampension KP Livsforsikring A/S
Samsung Fire & Marine Insurance
Sanlam
Sanso Investment Solution
Santa Fé Portfolios Ltda
Santam Ltd

Sarasin & Partners
Saskatchewan Healthcare Employees' Pension Plan
Schroders
SEB Asset Management AG
Second Swedish National Pension Fund (AP2)
ŞEKERBANK T.A.Ş.
Seventh Swedish National Pension Fund (AP7)
Shinhan Bank
Siemens Kapitalanlagegesellschaft mbH
Sisters of St Francis of Philadelphia
Sisters of St. Dominic of Caldwell NJ
Sitawi Finanças do Bem
Sixth Swedish National Pension Fund (AP6)
Skandia
Skandinaviska Enskilda Banken AB (SEB AB)
Smith Pierce, LLC
SNW Asset Management
Social(k)
Sociedade de Previdência Complementar da Dataprev - Prevdatab
Societe Generale
Socrates Fund Management
Sompo Holdings, Inc
Sonen Capital LLC
Sopher Investment Management
South Yorkshire Pensions Authority
SouthPeak Investment Management
Sprucegrove Investment Management Ltd
Standard Chartered
Standish Mellon Asset Management
State Bank of India
State Street Global Advisors (SSgA)
StatewideSuper
Stewart Investors
Stone Harbor Investment Partners
Storebrand ASA
Strathclyde Pension Fund
Stratus Group

Sul América Investimentos Distribuidora de Títulos e Valores Mobiliários S.A.

Sumitomo Mitsui Financial Group

Sumitomo Mitsui Trust Holdings, Inc.

Sun Life Financial Inc.

SUSI Partners AG

Sustainable Capital

Sustainable Development Capital LLP

Sustainable Insight Capital Management (SICM)

Svenska Handelsbanken

Svenska Kyrkan, Church of Sweden

Swedbank

Swift Foundation

Swiss Re

Sycamore Asset Management

T. Rowe Price Associates, Inc.

T.GARANTİ BANKASI A.Ş.

T.SINAI KALKINMA BANKASI A.Ş.

Taishin Financial Holdings

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TD Asset Management (TD Asset Management Inc. and TDAM USA Inc.)

Telluride Association

Tempis Capital Management Co., Ltd.

Terra Alpha Investments LLC

Terra Global Capital, LLC

TerraVerde Capital Management LLC

TfL Pension Fund

The Brainerd Foundation

The Bullitt Foundation

The Children's Investment Fund Foundation

The Church Pension Fund

The Clean Yield Group

The Collins Foundation

The Co-operators Group Limited

The Council of Lutheran Churches

The Daly Foundation

The Hartford Financial Services Group, Inc.

The Joseph Rowntree Charitable Trust

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The New School

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The University of Edinburgh Endowment Fund

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Voya Investment Management

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Water Asset Management, LLC

Wells Fargo Social Impact Investing

Wespath Investment Management

West Midlands Pension Fund

West Yorkshire Pension Fund

Westpac Banking Corporation

WHEB Asset Management

White Owl Capital AG

Whitley Asset Management

Xoom Capital

YES BANK Limited

York University

Youville Provident Fund Inc.

Yuanta Financial Holdings

Zevin Asset Management

Zurich Cantonal Bank

This report was written in memory of Tessa Tennant, OBE

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