CDP Climate Change Report 2015

China Edition

Written on behalf 822 of investors with US$95 trillion in assets

中国质量认证中心
CHINA QUALITY CERTIFICATION CENTRE

CDP 2015 climate change scoring partners

CDP works with a number of partners to deliver the scores for all our responding companies.

These partners are listed below along with the geographical regions in which they provide the scoring. All scoring partners have to complete a detailed training course to ensure the methodology and guidance are applied correctly and the scoring results go through a comprehensive quality assurance process before being published. In some regions there is more than one scoring partner and the responsibilities are shared between multiple partners.

In 2015, CDP worked with RepRisk, a business intelligence provider specializing in ESG risks (www.reprisk.com), who provided additional risk research and data into the proposed A-List companies to assess whether they were severe reputational issues that could put their leadership status into question.

FIRSTCARBON SOLUTIONS™

Australia & New Zealand, Benelux, Canada, Hong Kong, India, Ireland, Italy, Japan, Nordic, SE Asia, South Africa, UK, USA.

BHP Brugger and Partners Ltd. Switzerland	Consus Carbon Engineering Central and Eastern Europe (CEE)	CQC 中国质量认证中心 China Quality Certification Centre China
DEKRA France	Deloitte. Japan, Turkey	EY Japan, Korea
:FutureCamp Germany & Austria	gestão origami Brazil	KoSIF Korea Sustainability Investing Forum Korea
Lloyd's Register LRQA Japan	mgminnova Latin America	pwc Spain & Portugal (Iberia)
SGS Japan	sustainable Germany & Austria	REPRISK® ESG Business Intelligence All regions

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Please note: The selection of analyzed companies in this report is based on market capitalization of regional stock indices whose constituents change over time. Therefore the analyzed companies are not the same in 2010 and 2015 and any trends shown are indicative of the progress of the largest companies in that region as defined by market capitalization. Large emitters may be present in one year and not the other if they dropped out of or entered a stock index. 'Like for like' analysis on emissions for sub-set of companies that reported in both 2010 and 2015 is included for clarity. Some dual listed companies are present in more than one regional stock index. Companies referring to a parent company response, those responding after the deadline and self-selected voluntary responding companies are not included in the analysis. For more information about the companies requested to respond to CDP's climate change program in 2015 please visit:

https://www.cdp.net/Documents/disclosure/2015/Companies-requested-to-respond-CDP-climate-change.pdf

Paul Dickinson
Executive Chairman CDP

> Decarbonizing the global economy is an ambitious undertaking, even over many decades… corporate leaders understand the size of the challenge, and the importance of meeting it. We are on the threshold of an economic revolution that will transform how we think about productive activity and growth.

CDP was set up, almost 15 years ago, to serve investors. A small group of 35 institutions, managing US$4 trillion in assets, wanted to see companies reporting reliable, comprehensive information about climate change risks and opportunities.

Since that time, our signatory base has grown enormously, to 822 investors with US$95 trillion in assets. And the corporate world has responded to their requests for this information. More than 5,500 companies now disclose to CDP, generating the world's largest database of corporate environmental information, covering climate, water and forest-risk commodities.

Our investor signatories are not interested in this information out of mere curiosity. They believe, as we do, that this vital data offers insights into how reporting companies are confronting the central sustainability challenges of the 21st century. And the data, and this report, shows that companies have made considerable progress in recent years – whether by adopting an internal carbon price, investing in low-carbon energy, or by setting long-term emissions reduction targets in line with climate science.

For our signatory investors, insight leads to action. They use CDP data to help guide investment decisions – to protect themselves against the risks associated with climate change and resource scarcity, and profit from those companies that are well positioned to succeed in a low-carbon economy.

This year, in particular, momentum among investors has grown strongly. Shareholders have come together in overwhelming support for climate resolutions at leading energy companies BP, Shell and Statoil. There is ever increasing direct engagement by shareholders to stop the boards of companies from using shareholders' funds to lobby against government action to tax and regulate greenhouse gasses. This activity is vital to protect the public.

Many investors are critically assessing the climate risk in their portfolios, leading to select divestment from more carbon-intensive energy stocks – or, in some cases, from the entire fossil fuel complex. Leading institutions have joined with us in the Portfolio Decarbonization Coalition, committing to cut the carbon intensity of their investments.

This momentum comes at a crucial time, as we look forward to COP21, the pivotal UN climate talks, in Paris in December. A successful Paris agreement would set the world on course for a goal of net zero emissions by the end of this century, providing business and investors with a clear, long-term trajectory against which to plan strategy and investment.

Without doubt, decarbonizing the global economy is an ambitious undertaking, even over many decades. But the actions that companies are already taking, and reporting to CDP, show that corporate leaders understand the size of the challenge, and the importance of meeting it.

We are on the threshold of an economic revolution that will transform how we think about productive activity and growth. We are beginning to decouple energy use and greenhouse gas emissions from GDP, through a process of 'dematerialization' – where consumption migrates from physical goods to electronic products and services. This will create new assets, multi-billion dollar companies with a fraction of the physical footprint of their predecessors.

Similarly, there is a growing realization that 'work' is no longer a place, but increasingly an activity that can take place anywhere. And it no longer relies on the physical, carbon-intensive infrastructure we once built to support it.

In the 19th century we built railway lines across the globe to transport people and goods. Now we need to create a new form of transportation, in the form of broadband. Investment in fixed and mobile broadband will create advanced networks upon which the communications-driven economy of the 21st century can be built – an economy where opportunity is not limited by time or geography, and where there are no limits to growth.

An economic revolution of this scale will create losers as well as winners. Schumpeter's 'creative destruction', applied to the climate challenge, is set to transform the global economy. It is only through the provision of timely, accurate information, such as that collected by CDP, that investors will be able to properly understand the processes underway. Our work has just begun.

Meg Whitman

President and CEO, Hewlett Packard Enterprise

Climate change is one of the most complex challenges facing business and governments. At Hewlett Packard Enterprise, we believe that by uniting people, ideas and technology, we can help solve many of the world's challenges, including climate change. The way we respond will have a profound and permanent impact on the health and prosperity of future generations.

> **We must take swift and bold action to address the root causes of climate change. This means disrupting the status quo—changing the way we do business, holding ourselves and others accountable, and creating innovative solutions that drive a low-carbon economy.**

As country leaders gather at COP21 to discuss a new global agreement to combat climate change, the message from climate scientists is clear: greenhouse gases are contributing to the warming of our planet at an alarming rate. We must take swift and bold action to address the root causes of climate change. This means disrupting the status quo—changing the way we do business, holding ourselves and others accountable, and creating innovative solutions that drive a low-carbon economy.

The Information and Communication Technology (ICT) industry is uniquely suited to combat climate change by enabling more sustainable business models and revolutionizing industries at speed and scale. But even as technology transforms other industries, we also must work to reduce the carbon footprint of the ICT industry. By 2020, 30 billion connected devices will generate unprecedented amounts of data. And this will only increase. This massive amount of data is collected, processed, stored and managed in large-scale data centers around the world, which collectively consume a tremendous amount of energy. Soon, we may not be able to make enough energy to keep up with the needs of these enormous data centers. Today, data centers that power the public cloud use more energy than the countries of Germany and Japan combined, and may soon require more energy than we can even produce each year.

Clearly, we must reduce the energy demand and space requirements of data centers. That's why Hewlett Packard Labs is focused on reimagining computing at its core. The Machine is our transformative research initiative that we believe will fundamentally change the architecture of computing—which has stood unchallenged for 60 years—enabling a quantum leap in performance and efficiency. We estimate that The Machine will use only 1 percent of the energy per calculation achievable today. We believe this is the type of disruptive innovation that is required to sustainably meet the data needs of the future. At the same time, we must address data center energy at the source.

In July, we signed a 12-year power purchase agreement for 112 megawatts (MW) of wind power with SunEdison, Inc. This agreement is sufficient to power 100 percent of our Texas-based data center operations, which support Hewlett Packard Enterprise's entire internal global information technology (IT) requirements and the delivery of IT services to a portion of our customers.

I'm thrilled to say that this agreement will help us reach our 2020 operational greenhouse gas emissions reduction goal by the end of fiscal year 2015, five years ahead of schedule. This action also makes us the first global IT company to set and achieve a science-based operational target in part using CDP and World Wildlife Fund's The 3% Solution[1]. The 3% Solution provides corporations with a guide for setting targets on a track to stay below the 2 degrees Celsius increase identified as a critical threshold, while driving profits.

Science-based goals help promote accountability and maximize impact, which is why we joined CDP and other business leaders in supporting the We Mean Business 'Commit to Action' initiative, in which we committed to develop corporate environmental goals that are based on climate science. We invite other forward-thinking companies to join us in supporting We Mean Business, sending a clear signal to global leaders that we are taking bold and meaningful action to combat climate change.

We are proud to stand with CDP, both as Hewlett Packard in the past and in the future as Hewlett Packard Enterprise, to help create a more secure, prosperous future for all. It is our hope that when future generations look back at 2015, they recognize this as the year that business and government leaders took the necessary action to combat climate change and drive a sustainable economy.

1 https://www.cdp.net/CDPResults/3-percent-solution-report.pdf

Global overview

The case for corporate action on climate change has never been stronger and better understood. With the scientific evidence of manmade climate change becoming ever more incontrovertible, leading companies and their investors increasingly recognize the strategic opportunity presented by the transition to a low-carbon global economy.

Global	2010	2015
Analyzed responses	1,799	1,997
Market cap of analyzed companies US$m*	25,179,776	35,697,470
Scope 1	5,459 $MtCO_2e$	5,382 $MtCO_2e$
Scope 2	1,027 $MtCO_2e$	1,301 $MtCO_2e$
Scope 1 like for like: 1306 companies	4,135 $MtCO_2e$	4,425 $MtCO_2e$
Scope 2 like for like: 1306 companies	794 $MtCO_2e$	887 $MtCO_2e$

* Market capitalization figures from Bloomberg at 1 January 2010 and 1 January 2015.

And they are acting to seize this opportunity. The latest data from companies that this year took part in CDP's climate change program – as requested by 822 institutional investors, representing US$95 trillion in assets – provide evidence that reporting companies are taking action and making investments to position themselves for this transition.

Growing momentum from the corporate world is coinciding with growing political momentum. Later this year, the world's governments will meet in Paris to forge a new international climate agreement. Whatever the contours of that agreement, business will be central to implementing the necessary transition to a low-carbon global economy.

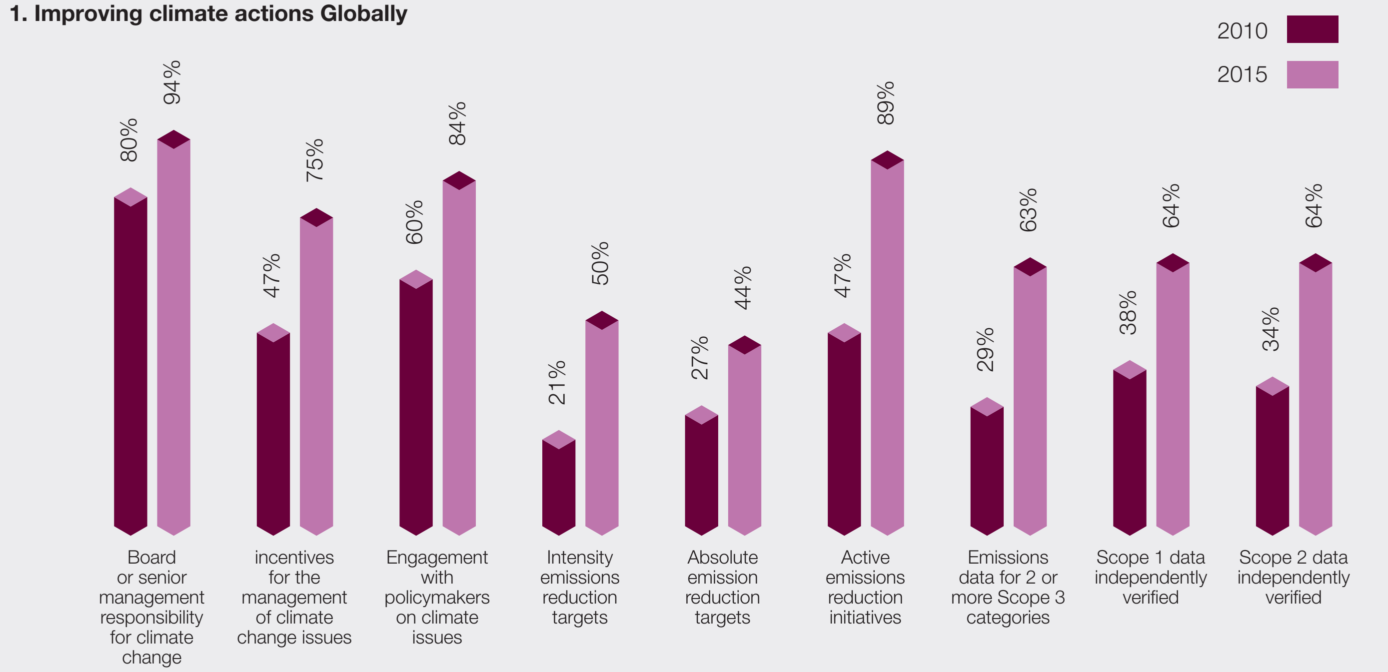
Business is already stepping up. The United Nations Environment Programme estimates that existing collaborative emissions reduction initiatives involving companies, cities and regions are on course to deliver the equivalent of 3 gigatons of carbon dioxide reductions by 2020. That's more than a third of the 'emissions gap' between existing government targets for that year and greenhouse gas emissions levels consistent with avoiding dangerous climate change.

Those investors who understand the need to decarbonize the global economy are watching particularly closely for evidence that the companies in which they invest are positioned to transition away from fossil fuel dependency.

By requesting that companies disclose through CDP, these investors have helped create the world's most comprehensive corporate environmental dataset. This data helps guide businesses, investors and governments to make better-informed decisions to address climate challenges.

This report offers a global analysis of the current state of the corporate response to climate change. For

1. Improving climate actions Globally



> **We are targeting the full operational emissions for the organisation, including electricity, natural gas, diesel and refrigerant gases used in operational buildings and fleets.**
>
> **J Sainsbury Plc**

> **CDP has changed the way investors are able to understand the impact of climate change in their portfolio... promoting awareness of what risks or benefits are embedded into investments.**
>
> **Anna Kearney**
> **BNY Mellon**

the first time, CDP compares the existing landscape to when the world was last on the verge of a major climate agreement. By comparing data disclosed in 2015 with the information provided in 2010, this report tracks what companies were doing in 2009, ahead of the ill-fated Copenhagen climate talks at the end of that year.

The findings show considerable progress: with corporate and investor engagement with the climate issue; in leading companies' management of climate risk; and evidence that corporate action is proving effective. However, the data also shows that much more needs to be done if we are to avoid dangerous climate change.

Growing corporate engagement on climate change…

For the purposes of this 2015 report and analysis, we focused on responses from 1,997 companies, primarily selected by market capitalization through regional stock indexes and listings, to compare with the equivalent 1,799 companies that submitted data in 2010. These companies, from 51 countries around the world, represent 55% of the market capitalization of listed companies globally.

The data shows significant improvements in corporate management of climate change. What was leading behavior in 2010 is now standard practice. For example, governance is improving, with a higher percentage of companies allocating responsibility for climate issues to the board or to senior management (from 80% to 94% of respondents). And more companies are incentivizing employees through financial and non-financial means to manage climate issues (47% to 75%).

Importantly, the percentage of companies setting targets to reduce emissions has also grown strongly. Forty four per cent now set goals to reduce their total greenhouse gas emissions, up from just 27% in 2010. Even more – 50% - have goals to reduce emissions per unit of output, up from 20% in 2010.

Companies are responding to the ever-more compelling evidence that manmade greenhouse gas emissions are warming the atmosphere. This helps build the business case for monitoring, measuring and disclosing around climate change issues. But greater corporate engagement with climate change is at least partly down to influence from increasingly concerned investors.

… Amid growing investor concern

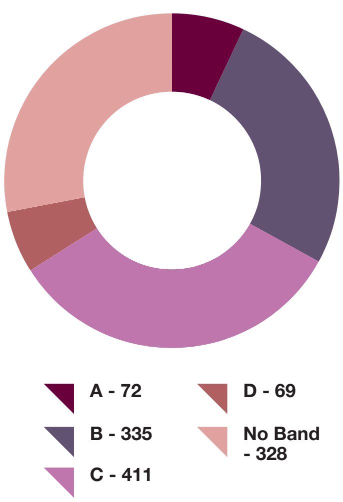
Since 2010, there has been a 54% rise in the number of institutional investors, from 534 to 822, requesting disclosure of climate change, energy and emissions data through CDP.

Investors are also broadening the means by which they are encouraging corporate action on emissions. In recent years, they have launched several other initiatives.

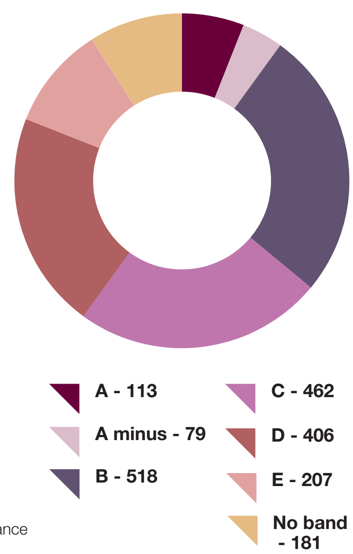
For example, a number of institutional investors have come together in the 'Aiming for A' coalition to call on specific major emitters to demonstrate good strategic carbon management by attaining (and maintaining) inclusion in CDP's Climate A List. The A List recognizes companies that are leading in their actions to reduce emissions and mitigate climate change in the past CDP reporting year. In 2015, following a period of engagement with the companies, the coalition was successful in passing shareholder resolutions calling for improved climate disclosure at the annual meetings of BP, Shell and Statoil, with nearly 100% of the votes in each case.

Investors are also applying principles of transparency and exposure to themselves. More than 60 institutional investors have signed the Montréal Carbon Pledge, under which they commit to measure and publicly disclose the carbon footprint of

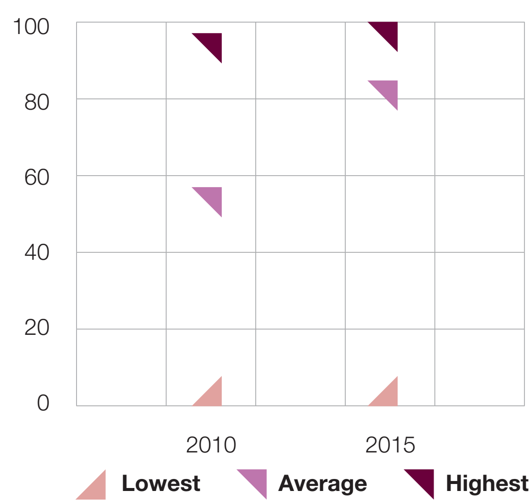
2. 2010 performance bands globally*



3. 2015 performance bands globally



4. Disclosure scores over time Globally



* in 2010 and 2015 not all companies were scored for performance

We have a public commitment to meet 100% of electricity requirements through renewables by fiscal 2018 and we will be investing in about 200 MW of solar PV plants.

Infosys

Google uses carbon prices as part of our risk assessment model. For example, the risk assessment at individual data centers also includes using a shadow price for carbon to estimate expected future energy costs.

Google

their investment portfolios on an annual basis. It aims to attract commitment from portfolios totaling US$3 trillion in time for the Paris climate talks.

Investors are seeking to better understand the link between lower carbon emissions and financial performance, including through the use of innovative investor products such as CDP's sector research, launched this year, which directly links environmental impacts to the bottom line. Some investors are taking the next logical step, and are working to shrink their carbon footprints via the Portfolio Decarbonization Coalition (PDC). As of August, the PDC – of which CDP is one the founding members – was overseeing the decarbonization of US$50 billion of assets under management by its 14 members.

Leading to effective corporate action

Companies are responding to these signals. In total, companies disclosed 8,335 projects or initiatives to reduce emissions in 2015, up from 7,285 in 2011 (the year for which the data allows for the most accurate comparison). The three most frequently undertaken types of project are: improving energy efficiency in buildings and processes; installing or building low carbon energy generators; and changing behavior, such as introducing cycle to work schemes, recycling programs and shared transport.

More than a third (36%) of reporting companies have switched to renewable energy to reduce their emissions. On average, the companies that purchased renewable energy in 2015 have doubled the number of activities they have in place to reduce their emissions, showing their growing understanding or capacity to realize the benefits of lower carbon business. Further, 71% (1,425) of respondents are employing energy efficiency measures to cut their emissions, compared with 62% (1,185) in 2011, demonstrating that companies are committed to reducing wasted energy wherever possible.

Companies are also quietly preparing for a world with constraints – and a price – on carbon emissions. In the past year particularly, we have seen a significant jump in the number of companies attributing a cost to each ton of carbon dioxide they emit, to help guide their investment decisions. This year 435[2] companies disclosed using an internal price on carbon, a near tripling of the 150 companies in 2014. Meanwhile, an additional 582 companies say they expect to be using an internal price on carbon in the next two years.

However, these efforts have not proved sufficient to adequately constrain emissions growth. On a like-for-like basis, direct ('Scope 1') emissions from the companies analyzed for this report grew 7% between 2010 and 2015. Scope 2 emissions, associated with purchased electricity, grew 11%. There are many factors that might explain this, not least economic growth but this rise in emissions is also considerably lower than would have been the case without the investments made by responding companies in emissions reduction activities.

Good progress – but it needs to accelerate

Companies disclosing through CDP's climate change program have made substantial progress in understanding, managing and beginning to reduce their climate change impacts. However, if dangerous climate change is to be avoided, emissions need to fall significantly.

Governments have committed to hold global warming to less than 2°C above pre-industrial levels. The Intergovernmental Panel on Climate Change calculates that to do this, global emissions need to fall between 41% and 72% by 2050. Although more companies are setting emissions targets, few of them are in line with this goal. In most cases, targets are neither deep enough nor sufficiently long term.

More than half (51%) of absolute emissions targets adopted by the reporting sample extend only to 2014 or 2015. Two fifths (42%) run to 2020 but only 6% extend beyond that date. The figures for intensity targets are almost identical. This caution in target setting is likely the result of the uncertain policy environment: many companies will be awaiting the outcome of the Paris climate talks before committing to longer-term targets.

However, a number of big emitters – such as utilities Iberdrola, Enel and NRG – have established long-term, ambitious emissions targets that are in line with climate science. These companies recognize that there is a business case for taking on such targets and setting a clear strategic direction, including encouraging innovation, identifying new markets and building long-term resilience. Many other companies have pledged to do so through the We Mean Business 'Commit to Action' initiative.

CDP aims to work along a number of fronts to help other companies, especially in high-emitting sectors, join them. With its partners, CDP has developed a sector-based approach to help companies set climate science-based emissions reduction targets. The Science Based Targets initiative uses the 2°C scenario developed by the International Energy Agency.

Looking forward, CDP will encourage more ambitious target setting through our performance scoring, by giving particular recognition to science-based targets. We are planning gradual changes to our scoring methodology that will reward companies that are transitioning towards renewable energy sources at pace and scale.

In addition, CDP is working with high-emitting industries to develop sector-specific climate change questionnaires and scoring methodologies, to ensure that disclosure to CDP, and the actions required to show leading performance, are appropriate for each sector. In 2015, we piloted a sector-specific climate change questionnaire and scoring methodology privately with selected oil and gas companies, ahead of their intended implementation in 2016.

The numbers for companies using or planning to implement internal carbon pricing are based on the sample analyzed for Putting a price on risk:Carbon pricing in the corporate world. Of the 1,997 companies analyzed in this report 315 have disclosed that they set an internal carbon price, with 263 planning to do so. For more detail, see https://www.cdp.net/CDPResults/carbon-pricing-in-the-corporate-world.pdf

The climate negotiations in Paris at the end of the year present a unique opportunity for countries around the world to commit to a prosperous, low carbon future. The more ambitious the effort, the higher the rewards will be. But Paris is a milestone on the road to a better climate, not the grand finale.

Unilever

And business needs a seat at the table in Paris

The Paris climate agreement will, we hope, provide vital encouragement to what is a multi-decade effort to bring greenhouse gas emissions under control. It will hopefully give private sector emitters the confidence to set longer-term emissions targets aligned with climate change. Companies and their investors therefore will be, alongside national governments, arguably the most important participants in ensuring the success of the global effort to rein in emissions.

Companies that have an opinion on a global climate deal are overwhelmingly in support: when asked if their board of directors would support a global climate change agreement to limit warming to below 2°C, 805 companies said yes, while 111 said no. However, a large number of respondents (1,075) stated they have no opinion, and 331 did not answer the question. This suggests either a lack of clarity around the official board position on the issue, or that many companies are not treating the imminent climate talks with the necessary strategic priority.

Conclusion

The direction of travel is clear: the world will need to rapidly reduce emissions to prevent the worst effects of climate change. And the political will is building to undertake those reductions. The majority of those reductions will need to be delivered by the corporate world – creating both risk and opportunity.

CDP and the investors we work with have played a formative role in building awareness of these risks and opportunities. Our data has helped build the business case for emissions reduction and inform investment decisions. The corporate world is responding with thousands of emissions reduction initiatives and projects. But the data also shows that efforts will need to be redoubled, by both companies and their investors, if we are to successfully confront the challenge of climate change in the years to come.

A deeper dive into corporate environmental risk

Central to CDP's mission is communicating the progress companies have made in addressing climate change, and highlighting where risk may be unmanaged. To better do so, CDP has introduced sector-specific research for investors.

This forward-looking research links environmental impacts directly to the bottom line and directs investors as to how they can engage with companies to improve environmental performance.

The research flags topical environmental and regulatory issues within particular sectors, relevant to specific companies' financial performance and valuation, and designed for incorporation into investment decisions. Sectors covered to date include automotive, electric utilities and chemicals. The research is intended to support engagement with companies, providing actionable company-level conclusions.

To better equip investors in understanding carbon and climate risk, CDP is also developing further investor tools such as a carbon footprinting methodology, and is working continuously to improve the quality of our data.

Working towards water stewardship

CDP has this year introduced the first evaluation and ranking of corporate water management, using scoring carried out by our lead water-scoring partner, South Pole Group.

The questions in the water disclosure process guide companies to comprehensively assess the direct and indirect impacts that their business has on water resources, and their vulnerability to water availability and quality.

Introducing credible scoring will catalyze further action. It will illuminate where companies can improve the quality of the information they report, and their water management performance. Participants will benefit from peer benchmarking and the sharing of best practice.

Water scoring will follow a banded approach, with scores made public for those companies reaching the top 'leadership' band. Scoring will raise the visibility of water as a strategic issue within companies and increase transparency on the efforts they are making to manage water more effectively.

Furthermore, scoring will be used to inform business strategies, build supply chain resilience and secure competitive advantage. We hope that keeping score on companies and water will reduce the detrimental impacts that the commercial world has on water resources, ensuring a better future for all.

The Climate A List 2015

CDP A LIST 2015 CLIMATE

Company	Country
Consumer Discretionary	
Best Buy Co., Inc.	USA
BMW AG	Germany
Coway Co Ltd	South Korea
Fiat Chrysler Automobiles NV	Italy
Las Vegas Sands Corporation	USA
LG Electronics	South Korea
Melia Hotels International SA	Spain
NH Hotel Group	Spain
Nissan Motor Co., Ltd.	Japan
Sky UK Limited	United Kingdom
Sony Corporation	Japan
Wyndham Worldwide Corporation	USA
YOOX SpA	Italy
Consumer Staples	
Asahi Group Holdings, Ltd.	Japan
Brown-Forman Corporation	USA
Diageo Plc	United Kingdom
J Sainsbury Plc	United Kingdom
Kesko Corporation	Finland
L'Oréal	France
Nestlé	Switzerland
Philip Morris International	USA
SABMiller	United Kingdom
Suntory Beverage & Food	Japan
Unilever plc	United Kingdom
Energy	
Galp Energia SGPS SA	Portugal
PTT Exploration & Production Public Company Limited	Thailand

Company	Country
Financials	
Bank of America	USA
BNY Mellon	USA
CaixaBank	Spain
Citigroup Inc.	USA
Credit Suisse	Switzerland
Dexus Property Group	Australia
Foncière des Régions	France
Grupo Financiero Banorte SAB de CV	Mexico
Host Hotels & Resorts, Inc.	USA
ING Group	Netherlands
Intesa Sanpaolo S.p.A	Italy
Investa Office Fund	Australia
Investec Limited	South Africa
Kiwi Property Group	New Zealand
Macerich Co.	USA
MAPFRE	Spain
Nedbank Limited	South Africa
Principal Financial Group, Inc.	USA
Raiffeisen Bank International AG	Austria
Shinhan Financial Group	South Korea
Simon Property Group	USA
Standard Chartered	United Kingdom
State Street Corporation	USA
T.GARANTİ BANKASI A.Ş.	Turkey
The Hartford Financial Services Group, Inc.	USA
Health Care	
Roche Holding AG	Switzerland
Industrials	
Abengoa	Spain
Carillion	United Kingdom

CDP A LIST 2015 CLIMATE

Company	Country
CNH Industrial NV	United Kingdom
CSX Corporation	USA
Dai Nippon Printing Co., Ltd.	Japan
Deutsche Bahn AG*	Germany
Deutsche Post AG	Germany
FERROVIAL	Spain
Huber + Suhner AG	Switzerland
Hyundai E&C	South Korea
Kingspan Group PLC	Ireland
Kone Oyj	Finland
Obrascon Huarte Lain (OHL)	Spain
Pitney Bowes Inc.	USA
Raytheon Company	USA
Royal BAM Group nv	Netherlands
Royal Philips	Netherlands
Samsung C&T	South Korea
Samsung Engineering	South Korea
Schneider Electric	France
Senior Plc	United Kingdom
Shimizu Corporation	Japan
Siemens AG	Germany
Stanley Black & Decker, Inc.	USA
United Technologies Corporation	USA
Information Technology	
Accenture	Ireland
Adobe Systems, Inc.	USA
Alcatel - Lucent	France
Apple Inc.	USA
Atos SE	France
Autodesk, Inc.	USA
Cisco Systems, Inc.	USA
EMC Corporation	USA

Company	Country
Google Inc.	USA
Hewlett-Packard	USA
Hitachi, Ltd.	Japan
Juniper Networks, Inc.	USA
LG Innotek	South Korea
Microsoft Corporation	USA
Samsung Electro-Mechanics Co., Ltd.	South Korea
Samsung Electronics	South Korea
Materials	
BillerudKorsnäs	Sweden
Givaudan SA	Switzerland
Harmony Gold Mining Co Ltd*	South Africa
International Flavors & Fragrances Inc.	USA
Kumba Iron Ore	South Africa
Sealed Air Corp.	USA
Symrise AG	Germany
The Mosaic Company	USA
Telecommunication Services	
Belgacom	Belgium
KT Corporation	South Korea
LG Uplus	South Korea
Sprint Corporation	USA
Swisscom	Switzerland
Telefonica	Spain
Telenor Group	Norway
Utilities	
ACCIONA S.A.	Spain
E.ON SE	Germany
EDP - Energias de Portugal S.A.	Portugal
Entergy Corporation	USA
Iberdrola SA	Spain

*Deutsche Bahn responded through Mittelstand program and is not included in analysis

*Harmony Gold Mining is not part of analysis sample

Each year companies that participate in CDP's climate change program are scored against two parallel assessment schemes: performance and disclosure.

The performance score assesses the level of action, as reported by the company, on climate change mitigation, adaptation and transparency. Its intent is to highlight positive climate action as demonstrated by a company's CDP response. A high performance score signals that a company is measuring, verifying and managing its carbon footprint, for example by setting and meeting carbon reduction targets and implementing programs to reduce emissions in both its direct operations and supply chain.

The disclosure score assesses the completeness and quality of a company's response. Its purpose is to provide a summary of the extent to which companies have answered CDP's questions in a structured format. A high disclosure score signals that a company provided comprehensive information about the measurement and management of its carbon footprint, its climate change strategy and risk management processes and outcomes.

The highest scoring companies for performance and/or disclosure enter the A List (Performance band A) and / or the Climate Disclosure Leadership Index (CDLI). Public scores are available in CDP reports, through Bloomberg terminals, Google Finance and Deutsche Boerse's website.

In 2015 the climate change scoring methodology was revised to put more emphasis on action and as a result achieving A is now better aligned with what the current climate change scenario requires.

CDP operates a strict conflict of interest policy with regards to scoring and this can be viewed at https://www.cdp.net/Documents/Guidance/2015/CDP-conflict-of-interest-policy.pdf

What are the A List and CDLI criteria?

To enter the A List, a company must:

- Make its response public and submit via CDP's Online Response System
- Attain a performance score greater than 85
- Score maximum performance points on question 12.1a (absolute emissions performance) for GHG reductions due to emission reduction actions over the past year 4% or above in 2015)
- Disclose gross global Scope 1 and Scope 2 figures
- Score maximum performance points for verification of Scope 1 and Scope 2 emissions (having 70% or more of their emissions verified)
- Furthermore, CDP reserves the right to exclude any company from the A List if there is anything in its response or other publicly available information that calls into question its suitability for inclusion. CDP is working with RepRisk in 2015 to strengthen this background research.

Note: Companies that achieve a performance score high enough to warrant inclusion in the A List, but do not meet all of the other A List requirements are classed as Performance Band A- but are not included in the A List.

To enter the CDLI, a company must:

- Make its response public and submit via CDP's Online Response System
- Achieve a disclosure score within the top 10% of the total regional sample population*

*Note: while it is usually 10%, in some regions the CDLI cut-off may be based on another criteria, please see local reports for confirmation.

Communicating progress

Central to CDP's mission is communicating the progress companies have made in addressing climate change, and highlighting where risk may be unmanaged. To better do so, CDP is changing how our climate performance scoring is presented, and we have introduced sector-specific research for investors.

Banding performance scores

Starting with water and forests in 2015 and including climate change and supply chain in 2016, CDP is moving to present scores using an approach that illustrates companies' progress towards environmental stewardship. Each reporting company will be placed in one of the following bands:

- **Disclosure** measures the completeness of the company's response;
- **Awareness** measures the extent to which the company has assessed environmental issues, risks and impacts in relation to its business;
- **Management** measures the extent to which the company has implemented actions, policies and strategies to address environmental issues;
- **Leadership** looks for particular steps a company has taken which represent best practice in the field of environmental management.

We believe that this approach will be clearer and easier to understand for companies, investors and other stakeholders. Water and forest scores will use this new presentation of banded scores in 2015, while the updated scoring methodology for climate change will be available in February 2016 with results in late 2016.


DanTysk Offshore Wind
VATTENFALL
SWM

China Snapshot

56%

of Chinese companies have set absolute emission reduction targets

China's commitment to tackling climate change is driven from the very top of its political leadership. President Xi's September joint statement, with US President Barack Obama, saw China announce US$3.1 billion in international climate finance, and reiterated Beijing's plan to launch a national carbon trading program in 2017.

However, among Chinese corporations, climate change disclosure is at its early stages. Only nine Chinese companies disclosed to CDP's climate change program by the deadline in 2015, up from eight in 2010.

With such a limited sample size, it is difficult to draw meaningful inferences from the data collected. What we have seen, however, is a greater number of Chinese companies disclosing through CDP's supply chain program, and an improvement in the quality of the information they provide. This means that Chinese supplier companies are responding to requests from their multinational customers for greenhouse gas emissions and other climate change related data. It suggests that corporate influence from other economies is driving action within the Chinese market. Leading companies such as **China Mobile** are disclosing targets to reduce energy use, and have identified low-carbon strategic opportunities.

CDP will continue to work with the Chinese government and domestic companies to encourage disclosure as an essential foundation of climate change management. To that end, we are working with the Ministry of Finance, with support from the UK's Foreign and Commonwealth Office, to leverage its purchasing power as the coordinating body for public procurement. We are also partnering with the China Quality Certification Centre, with a view to addressing concerns about disclosure among Chinese companies.

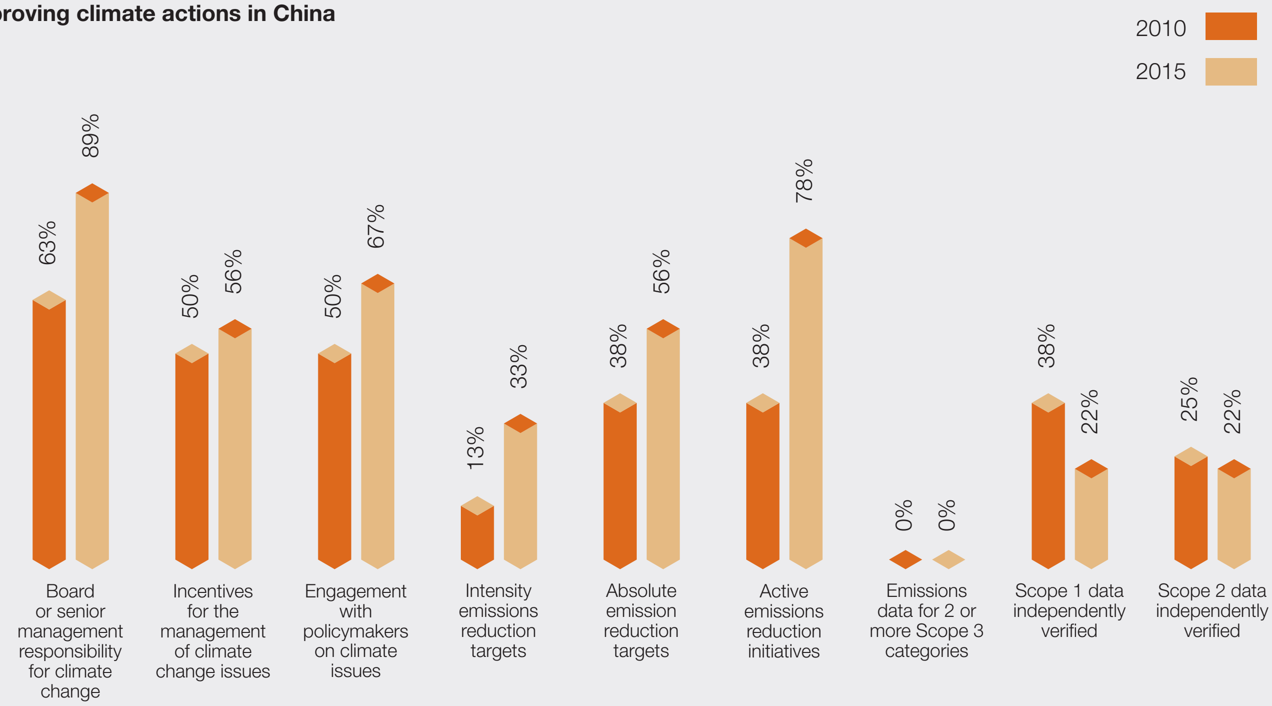
> **The company has recognized the opportunities brought by climate change, and realized that information and "Internet of things" service would be the low carbon service which the company should develop... and announced the energy saving target of 35% reduction on energy consumption per unit of information flow by 2015 compared to that of 2012.**
>
> **China Mobile**

China	2010	2015
Analyzed responses†	8 (5)	9 (19)
Market cap of analyzed companies US$m	530,144	970,697
Scope 1	21 MtCO$_2$e	68 MtCO$_2$e
Scope 2	1.4 MtCO$_2$e	0.06 MtCO$_2$e
Scope 1 like for like: 3 companies*	0.01 MtCO$_2$e	67 MtCO$_2$e
Scope 2 like for like: 3 companies	0.15 MtCO$_2$e	no data

* not all companies provided emissions data

† the number in brackets refers to companies that responded after the deadline, or referred to a parent company. They are not included in analysis.

1. Improving climate actions in China



Commentary

Recently, the two heads of China and the US released a joint statement on climate change. It states that China plans to launch a nationwide carbon emissions trading system in 2017. China has prepared for the emissions trading system for many years and finally it is ready to enter the formal operational stage. As the first full field carbon reduction DOE (Designated Operational Entity) under Clean Development Mechanism and China CCER (China Certified Emission Reduction) entity approved by UN and National Development and Reform Commission, and the only third party covering the seven pilot regions, CQC has already been addressing climate change for years. CQC has worked for the policy research in the climate change field for a few years, while CQC has also done quite a lot validations and verifications of individual projects.

While the national carbon emissions trading system is about to start, various non-pilot regions have also begun developing their own trading schemes and developing appropriate management and technical teams for implementation of the schemes. As a third-party entity with both practical experience and theoretical knowledge, CQC has been invited to various regions in order to help them with capacity building by trainings. Thus, the teams in those regions will have a very effective way to enhance their relevant abilities for future national carbon market, which is also quite good steady development for the coming national carbon market.

In 2015, as a partner of CDP for the carbon disclosure, CQC scored and analyzed the questionnaire responses from Chinese companies. Generally, the questionnaires received from the companies in 2015 are less than those in 2014. However, the quality of the feedback to questionnaires has been improved.

We are pleased to see that some Chinese companies have realized that climate change poses a risk to business operations but bears more opportunities. They have begun to measure the water and energy consumption, to rethink the development strategy, and to proactively show achievements and leadership in the international arena. The quality of the feedback to questionnaires has been improved, which indicates that the companies is discoloring the information more accurately, more comprehensively and more systematically. The companies are more active to communicate with the public and investors on environmental issues. Moreover, the reporting companies attended the CDP training and downloaded the reference from the website. And they also requested for the consultation in order to improve the quality of the feedback to questionnaires during the reporting period.

Under the energy conservation and climate change policy framework, more and more companies realize the importance of energy conservation and climate change for their competitive advantage and sustainable development. Some companies have identified and prioritized various risks and opportunities through potential impacts, relevance and possibilities. A few companies have disclosed the initiatives and investments to deal with the risks and opportunities.

Regarding the emission situation, more and more reporting companies are aware of the importance of emissions data. Companies are also looking for the third-party to verify the emission data, which indicates that they are paying more attention to the accuracy of the data. Meanwhile, they have recognized that it is the basis to collect and analyze their energy consumption and emissions data for better understanding their business, identifying risks and opportunities, and developing their strategies.

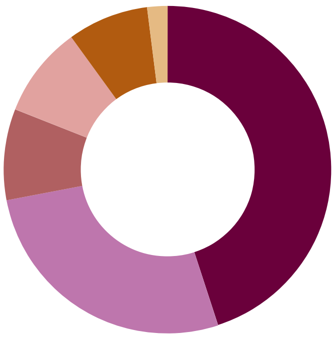
However, we also clearly see that, there is still considerable gap between the amount and the quality of the feedback to questionnaires from the Chinese companies and those companies from the developed countries. The leverage from the institutional investors are not in place yet. Some companies have not adequately understood the link between the risks/opportunities posed by climate change and the overall business strategy and target. Topics raised from CDP questionnaires have not been entering the board room and discussed by a lot of corporate executives.

Through collaboration with CDP, we hope the analysis and the report will be helpful both for the policy research at macro level and for companies at micro level.

As a national certification institution, CQC has been endeavoring in providing professional, high-efficiency certification services on the establishment of “Green Development” and “low-carbon economy”in China.

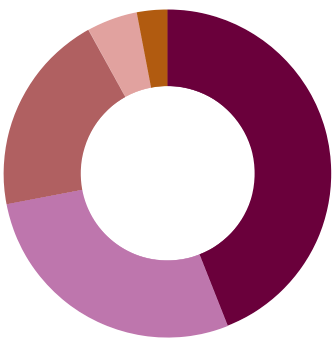
Appendix 1:
Investor signatories and members

1. Investor signatories by location



- **Europe** - 383 = 46%
- **North America** - 220 = 26%
- **Latin America & Caribbean** - 75 = 9%
- **Asia** - 78 = 9%
- **Australia and NZ** - 67 = 8%
- **Africa** - 16 = 2%

2. Investor signatories by type



- **Asset Managers** - 364 = 44%
- **Asset Owners** - 252 = 30%
- **Banks** - 162 = 19%
- **Insurance** - 37 = 5%
- **Others** - 19 = 2%

CDP investor initiatives – backed in 2015 by more than 822 institutional investors representing in excess of US$95 trillion in assets – give investors access to a global source of year-on-year information that supports long-term objective analysis.

This includes evidence and insight into companies' greenhouse gas emissions, water usage and strategies for managing climate change, water and deforestation risks. Investor members have additional access to data tools and analysis.

to become a member visit:
https://www.cdp.net/en-US/Programmes/Pages/what-is-membership.aspx

To view the full list of investor signatories please visit:
https://www.cdp.net/en-US/Programmes/Pages/Sig-Investor-List.aspx

3. Investor signatories over time

Investor members

ABRAPP - Associação Brasileira das Entidades Fechadas de Previdência Complementar
AEGON N.V.
Allianz Global Investors
ATP Group
Aviva Investors
AXA Group
Bank of America Merrill Lynch
Bendigo & Adelaide Bank Limited
BlackRock
Boston Common Asset Management, LLC
BP Investment Management Limited
California Public Employees' Retirement System
California State Teachers' Retirement System
Calvert Investment Management, Inc.
Capricorn Investment Group, LLC
Catholic Super
CCLA Investment Management Ltd
ClearBridge Investments
DEXUS Property Group
Etica Sgr
Fachesf
FAPES
Fundação Itaú Unibanco
Generation Investment Management
Goldman Sachs Asset Management
Henderson Global Investors
HSBC Holdings plc
Infraprev
KLP
Legg Mason Global Asset Management
London Pensions Fund Authority
Maine Public Employees Retirement System
Mobimo Holding AG
Morgan Stanley
National Australia Bank Limited
NEI Investments
Neuberger Berman
New York State Common Retirement Fund
Nordea Investment Management
Norges Bank Investment Management
Overlook Investments Limited
PFA Pension
Previ
Real Grandeza
Robeco
RobecoSAM AG
Rockefeller Asset Management, Sustainability & Impact Investing Group
Royal Bank of Canada
Royal Bank of Scotland Group
Sampension KP Livsforsikring A/S
Schroders
SEB AB
Sompo Japan Nipponkoa Holdings, Inc
Standard Chartered
Sustainable Insight Capital Management
TD Asset Management
Terra Alpha Investments LLC
The Wellcome Trust

Appendix 2:
Largest non-responders by market capitalization

Consumer Discretionary	Country
Amazon.com Inc.	USA
Comcast Corporation	USA
Fuji Heavy Industries Ltd.	Japan
Hermes International	France
Luxottica Group	Italy
Netflix, Inc.	USA
Saic Motor Corporation	China
Tesla Motors, Inc.	USA
The Priceline Group Inc	USA
Time Warner Cable Inc.	USA
Consumer Staples	
Alimentation Couche-Tard Inc.	Canada
Grupo Modelo S.A.	Mexico
Hengan Intl Group	China
Kweichow Moutai	China
Lorillard Inc.	USA
Magnit	Russia
Monster Beverage Corporation	USA
Thai Beverage PCL	Thailand
Tyson Foods, Inc.	USA
Want Want China Holdings Ltd.	Hong Kong
Energy	
Churchill Mining PLC	United Kingdom
Energy Transfer	USA
Enterprise Products Partners L.P.	USA
Kinder Morgan Inc.	USA
Oil & Natural Gas	India
Phillips 66	USA
Reliance Industries	India
Rosneft OAO	Russia
Valero Energy Corporation	USA
Williams Companies, Inc.	USA
Financials	
AIA Group Ltd.	Hong Kong
American Tower Corp.	USA
Bank of China	China
Berkshire Hathaway	USA
Cheung Kong	Hong Kong
DBS Group Holdings	Singapore
Industrial Bank	China
Munich Re	Germany
Public Storage	USA
Sun Hung Kai Properties	Hong Kong
Health Care	
Alexion Pharmaceuticals	USA
Cerner Corp	USA
Gilead Sciences, Inc.	USA
HCA	USA
Illumina Inc	USA
McKesson Corporation	USA
Mylan Inc.	USA
Perrigo Co.	Ireland
Sun Pharmaceutical Industries	India
Vertex Pharmaceuticals Inc	USA

Industrials	Country
Caterpillar Inc.	USA
China Shipbuilding Industry Co Ltd	China
CITIC Pacific	Hong Kong
Daqin Railway	China
General Dynamics Corporation	USA
Hutchison Whampoa	Hong Kong
Industries Qatar	Qatar
Jardine Matheson	Hong Kong
Nidec Corporation	Japan
Precision Castparts Corp.	USA
Information Technology	
ASML Holding	Netherlands
Avago Technologies	Singapore
Baidu Inc	China
Electronic Arts Inc.	USA
Facebook	USA
Hanergy Thin Film Power Group Ltd	China
Keyence Corporation	Japan
MediaTek	Taiwan
Nintendo Co., Ltd.	Japan
Tencent Holdings	China
Materials	
Baoshan Iron & Steel	China
CF Industries Holdings, Inc.	USA
Formosa Plastics Corp	Taiwan
Grupo Mexico S.A.B. de CV	Mexico
LyondellBasell Industries Cl A	USA
MMC Norilsk Nickel OSJC	Russia
Nan Ya Plastics	Taiwan
Nucor Corporation	USA
Siam Cement	Thailand
Southern Copper Corporation	Peru
Telecommunication Services	
Advanced Info Service	Thailand
America Movil	Mexico
Axiata Group Berhad	Malaysia
Bharti Airtel	India
China United Network Communications	China
Maroc Telecom	Morocco
SBA Communications Corp.	USA
SoftBank Corporation	Japan
Telekomunikasi Indonesia	Indonesia
VimpelCom Ltd	Netherlands
Utilities	
China Yangtze Power Co., Ltd.	China
Dominion Resources, Inc.	USA
Edison International	USA
Hong Kong & China Gas Company Limited	Hong Kong
NextEra Energy, Inc.	USA
PPL Corporation	USA
Public Service Enterprise Group Inc.	USA
Saudi Electricity	Saudi Arabia
Tenaga Nasional	Malaysia
The Southern Company	USA

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