

CDP Japan 500 Climate Change Report 2016

On behalf of 827 investors with assets of US\$100 trillion



Report writer



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Measurement and transparency are where meaningful climate action starts, and as governments work to implement the Paris Agreement, CDP will be shining a spotlight on progress and driving a race to net-zero emissions.

The Paris Agreement – unprecedented in speed of ratification – and the adoption of the Sustainable Development Goals (SDGs) marked the start of a new strategy for the world, with a clear message for businesses: the low-carbon revolution is upon us. By agreeing to limit global temperature rises to well below 2°C, governments have signaled an end to the fossil fuel era and committed to transforming the global economy.

The choice facing companies and investors has never been clearer: seize the opportunities of a carbon-constrained world and lead the way in shaping our transition to a sustainable economy; or continue business as usual and face serious risks – from regulation, shifts in technology, changing consumer expectations and climate change itself. CDP's data shows that hundreds of companies are already preparing for the momentous changes ahead, but many are yet to grapple with this new reality.

Investors are poised to capitalize on the opportunities that await. Some of the biggest index providers in the world, including S&P and STOXX, have created low-carbon indices to help investors direct their money towards the sustainable companies of the future. Meanwhile, New York State's pension fund – the third largest in the United States – has built a US\$2 billion low-carbon index in partnership with Goldman Sachs, using CDP data.

With trillions of dollars' worth of assets set to be at risk from climate change, investors are more focused than ever on winners and losers in the low-carbon transition. Information is fundamental to their decisions. Through CDP, more than 800 institutional investors with assets of over US\$100 trillion are asking companies to disclose how they are managing the risks posed by climate change. Their demands don't stop there: international coalitions of investors with billions of dollars under management are requesting greater transparency on climate risk at the AGMs of the world's biggest polluters.

The glass is already more than half full on environmental disclosure. Over fifteen years ago, when we started CDP, climate disclosure was nonexistent in capital markets. Since then our annual request has helped bring disclosure into the mainstream. Today some 5,800 companies, representing close to 60% of global market capitalization, disclose through CDP.

Now, we are poised to fill the glass. We welcome the FSB's new Task Force on Climate-related Financial Disclosures, building on CDP's work and preparing the way for mandatory climate-related disclosure across all G20 nations. We look forward to integrating the Task Force recommendations into our tried and tested disclosure system and working together to take disclosure to the next level.

We know that business is key to enabling the global economy to achieve – and exceed – its climate goals. This report sets the baseline for corporate climate action post-Paris. In future reports, we'll be tracking progress against this baseline to see how business is delivering on the low-carbon transition and enabling investors to keep score. Already, some leading companies in our sample – including some of the highest emitters – are showing it's possible to reduce emissions while growing revenue, and we expect to see this number multiply in future years.

Measurement and transparency are where meaningful climate action starts, and as governments work to implement the Paris Agreement, CDP will be shining a spotlight on progress and driving a race to net-zero emissions.

The Paris Agreement and the SDGs are the new compass for business. Companies across all sectors now have the chance to create this new economy and secure their future in doing so. High-quality information will signpost the way to this future for companies, investors and governments – never has there been a greater need for it.

LRQA Japan Foreword



One of the essential elements for responsible investment is disclosing corporate ESG information, especially in climate change which is regarded as the highest priority issue for corporate reporting, from great needs of grasping risk and new business opportunities that have not been perceived well from the past financial information.

The year 2015 was called as a “pivotal year” in the sustainability field with a great change. In September 2015 at the United Nations Headquarters “The 2030 Agenda for Sustainable Development” was adopted, and newly defined Sustainable Development Goals (SDGs) raised 17 objectives and 169 associated targets including climate change. Furthermore, the Paris Agreement was adopted at COP21 in December, which establishes a future international framework for climate change.

While such an international agreement develops, climate change crisis becomes evident year by year. In Japan this year as well, we had a long drought season followed by successive typhoons one after another. Such a climate change risk is no longer at a level that can be irrelevant to business. On the other hand, products and services that contribute to mitigate and help adapt to climate change can be the source of new business opportunities.

In line with this trend, Japan's Government Pension Investment Fund (GPIF), the world largest pension fund undersigned the United Nations Principles for Responsible Investment, and made the first step to ESG (environment, social and governance) investments. In the past, Europe and the United States had led responsible investment and Japan was behind, but now it shows that it is rapidly spreading in Japan, too.

One of the essential elements for responsible investment is disclosing corporate ESG information, especially in climate change which is regarded as the highest priority issue for corporate reporting, from great needs of grasping risk and new business opportunities that have not been perceived well from the past financial information. In Europe the directive is already issued to mandate disclosing non-financial information, and there is a clear trend where ESG information must be disclosed in global securities exchanges.

CDP has played a role promoting disclosure of corporate climate change information for the last dozen years or so. It becomes essential for evaluating investment to include corporate climate change information. Response to CDP by Japanese companies has reached at a global level now, not only in response rate but also in the quality of disclosed information. Moreover, the third party verification is introduced to secure credibility of information, which contributed to improve CDP scores of Japanese companies. It is really encouraging to know many Japanese companies are listed as A as a result of this.

LRQA has been a long-standing verification partner for CDP since its inception. I take this opportunity to thank for our privilege to take part in scoring and writing a report on Japanese companies' response following last year. We are determined to contribute in future to continuous development of CDP as well as continuous improvement for corporate value through corporate climate change actions by Japanese companies.

Toshihiko Shirabe

Area Operations Manager for North Asia
Lloyd's Register Quality Assurance Limited (LRQA)

SGS Japan Foreword



It appears that Japan is not so much good at advertising its outstanding technologies to save energy and actual achievements of saving energy and reduction of CO₂ emissions. Japan should manage better information disclosure and advertisement. It has to be done with the highest priority in the agenda of global climate change.

The Paris Agreement has been reached at the 21st Framework Convention on Climate Change held in November 2015. One of the remarkable achievements of COP21 is that all of the countries participated submitted target of reduction of CO₂ emissions as well as coming up with framework of monitoring its execution and progress every five years. CDP will make sure its progress in five years based on COP21 results. We are standing on the baseline in 2016 for that.

It has been reported in September that the US and China, which are the two largest countries emitting CO₂ would complete their ratification. Moreover, India and EU have ratified the agreement in October. Thereby, the agreement will meet the criteria and take effect in November. On the other hand, Japan has not completed its ratification as of October 5, 2016. It is obvious that Japan will be expedited to complete its ratification of the Paris Agreement considering its leadership position for these agenda in global community.

Japan has own Plan for Global Warming Countermeasures to achieve 26% reduction by FY2030 of CO₂ emissions comparing 2013. The fact is that, comparing 2013 CO₂ emissions with 2005, we observe decrease of emissions in industrial and transportation sectors and increase in all other sectors such as commercial, service and home. It is strongly dominated by the large magnitude of increase of thermal power generation, and hence extreme dependency on thermal in energy mix due to halt of the nuclear power plants after the accident in the East Japan Earthquake happened in 2011. It is rather significant and amazing that we have achieved decrease of CO₂ emissions in industrial and transportation sectors even with this difficult energy mix. We can claim how our environmental technologies are outstanding actually.

However, I expect further improvement in response rate to CDP in Japan, which is improving year by year to 49.6%*. It is yet to come to the response rate in EURO300 (88%) and UK FTSE350 (64%). It appears that Japan is not so much good at advertising its outstanding technologies to save energy and actual achievements of saving energy and reduction of CO₂ emissions. Japan should manage better information disclosure and advertisement. It has to be done with the highest priority in the agenda of global climate change. Even in the CDP responses in Japan, more than 20% of the responding corporations choose "not to be disclosed". I strongly expect that those corporations will change their choice to disclose contents to the public considering viable work done to respond to the CDP.

To foster understanding of the CDP in corporations, it is important to consider how investors evaluate these agenda. As of July 2016, 212 investment bodies claimed their acceptance of the Japan's Stewardship Code. GPIF (Government Pension Investment Fund) signed up for PRI (Principles for Responsible Investment) in 2015. Now it is ready to take into account non-financial important corporate information for right investment such as performance status for global climate change.

The environmental information disclosure system of MOE (Ministry of Environment) is going live, which provides an easier way to make comparison among corporations. This should also contribute to expansion of investment to corporations that drive environmental actions.

We will have the Tokyo Olympic and Paralympic Games in 2020. It will be the greatest opportunity for Japan to demonstrate our outstanding environmental technologies. SGS Japan has been contributing to CDP in scoring and reporting since 2014. It is great honor for me and I sincerely extend my appreciation representing SGS Japan. I am quite sure that CDP will be recognized as critical for the future. SGS Japan is committed to continue to contribute CDP activities.

*The data as of August 19, 2016

Nobuharu Suzuki
President, SGS Japan Inc.

Global executive summary

The challenge of climate change and how to address it is now firmly on the global agenda. The Paris Agreement has been ratified at unprecedented speed by the international community, including some of the world's biggest carbon emitters, such as the US, China, India, the EU and Brazil, and will enter into force in November.

This historic agreement, with defined goals to limit climate change and clear pathways for achieving its goals, marks a step-change in the transition to a low-carbon world.

In the Paris Agreement, emissions reductions are talked about at the country level, and national governments will lead with policy changes and regulation. But companies can move much faster than governments, and they have an opportunity to demonstrate their leadership, agility and creativity in curbing their own substantial emissions. Many companies had already realised the need for action before Paris, and they played an important role in making that summit a success. Others, however, are yet to come on board.

The first in an annual series, the report establishes the baseline for corporate action on climate change. In future reports, CDP will track companies' progress on reducing greenhouse gas emissions in line with the goals of the Paris Agreement against this benchmark.

The report presents analysis on corporate climate action including emissions reductions, the adoption of targets based on the most up-to-date climate science ("science based targets"), use of internal carbon prices, and the uptake of renewable energy.

The benchmark established in this first report includes a number of companies failing to engage even with the critical first step of disclosure. Of close to 2,000 companies in this global tracking sample, only just over a thousand responded with data within the deadline. We hope the remaining 700 odd companies will start to engage during the course of the next five years.

The 1,089 companies that provided the data for the global report will be tracked over the next five years to see how they are performing. Between them these companies account for 12 per cent of global greenhouse gas emissions, and 85 per cent of them have already set targets to reduce their emissions.

Figure 1: Global company tracking sample by sector. The total number of companies in each sector is presented in parentheses.

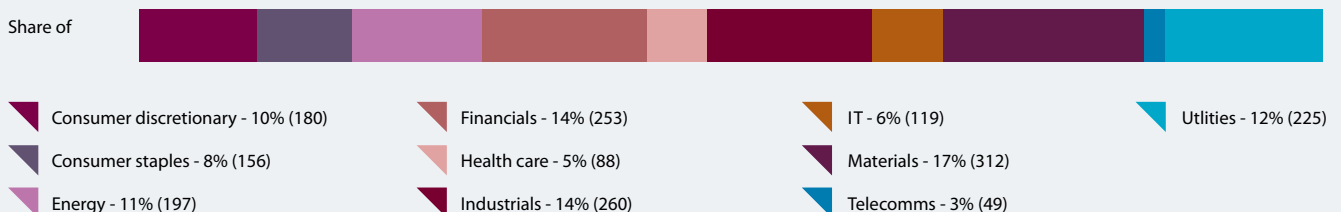


Figure 2: Global company tracking sample by region. The total number of companies is presented in parentheses.

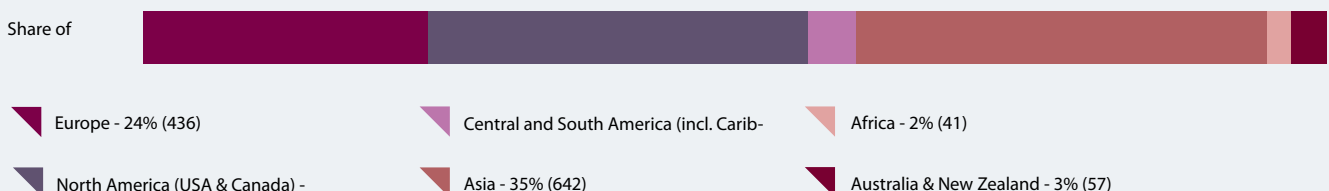


Figure 3: Companies responded and not-responded by sector. The total number of companies in each sector is presented in parentheses.

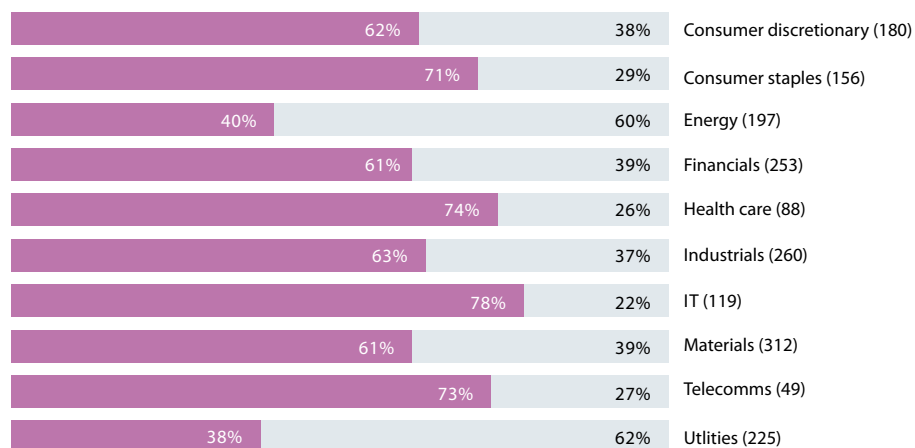
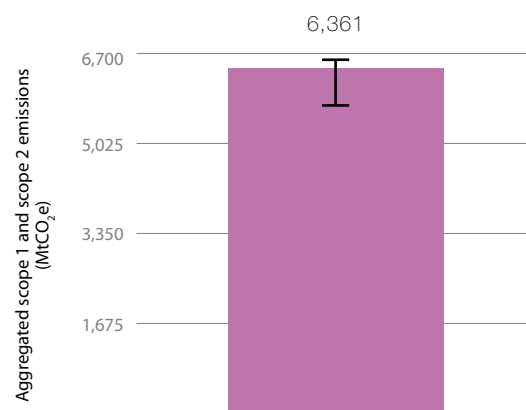


Figure 4: Aggregated scope 1 and scope 2 emissions for total sample. The total number of companies responded is presented in parentheses.



Visibility on the road

Although companies and governments are starting to realise the benefits of the low-carbon transition, the need for a complete economic shift can make it hard for individual companies to start the process of change. A shift in thinking is also needed, to see the transition as an opportunity, rather than a restriction.

In order to achieve this success, however, companies need to measure their emissions, then work out how to reduce them.

Given that only 62 per cent of companies contacted by CDP for the report were able to provide data on their own emissions, many businesses have yet to grasp the importance of this challenge. However, the number disclosing is increasing, and the Paris Agreement should provide a greater incentive to engage.

Business gearing up to go low-carbon, but targets lack long-term vision

Eighty-five per cent of companies that provided data have already set targets (comprising absolute and/or intensity targets) to reduce their greenhouse gas emissions. Setting targets is not enough, however, without realistic plans for meeting them. Even meeting those targets might not be enough if the targets themselves are inadequate.

There has been significant improvement in recent years in the numbers of companies setting targets for

emissions reductions, but these targets are in many cases unambitious in their time horizon. While 55 per cent of companies have targets for 2020 and beyond, just 14 per cent set goals for 2030 or beyond, a situation that must change to achieve a transition to well-below 2°C.

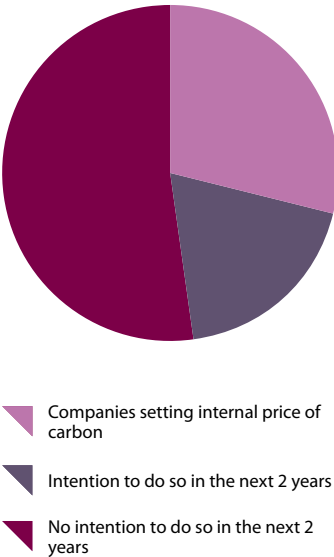
The headline figures from this report mask wide variance in performance both at company level and at sector level. Perhaps inevitably, the energy sector has a lower share of companies with emissions reduction targets, in particular for 2020 and beyond. This should not surprise us, because fossil fuel companies must undergo a major transition to mitigate climate change and are in general not ready to face up to this.

Given that this data is mostly based on calendar year 2015, and so predates the Paris Agreement, we may reasonably hope to see a jump in longer term targets in the next report, which will be based on data generated after the Paris Agreement.

Companies wishing to ensure they are taking meaningful action should set science-based targets; this report and its successors will monitor how many companies are setting targets in line with the latest climate science.

From the sample, 94 have publicly committed to science-based greenhouse gas reduction targets via the Science Based Targets Initiative. Eighty-five of those companies submitted a target to the initiative for official check, and 15 companies have passed the initiative's official check.

Figure 5: Share of companies setting an internal price of carbon



Company targets achieving just one quarter of the emissions reductions required by science; Paris Agreement expected to help close that gap

As well as recording them, we analyse the potential impact of the existing targets to see if they are compatible with the objective of limiting global warming to well-below 2°C.

We found that if the companies in the sample were to achieve their current targets, they could realise 1Gt CO₂e (1,000 MtCO₂e) of reductions by 2030. This is about one quarter of the 4GtCO₂e (4,145 MtCO₂e) of reductions that this group of companies would need to achieve in order to be in line with a 2°C-compatible pathway, leaving a gap of at least 3GtCO₂e (3,145 MtCO₂e) between where companies' current targets take them, and where they should be. This gap is equal to nearly 50 per cent of these companies' current total emissions.

The amount of emissions reductions pledged by companies has been increasing steadily from 2011 to 2015 and we hope to see it close at a faster rate in future years, as company targets become more ambitious in response to the regulatory certainty offered by the Paris Agreement.

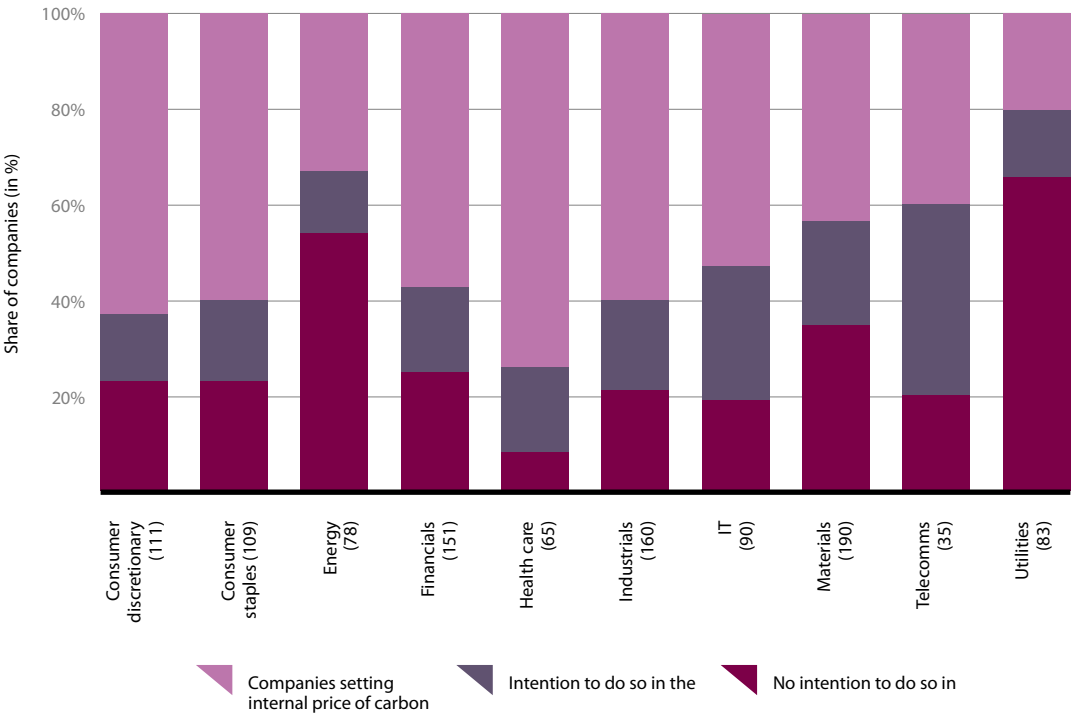
Transition planning: carbon pricing on the rise, yet companies lag in renewable energy production and consumption

Even those companies that have not set themselves targets have almost all established emissions reduction initiatives (97 per cent of all companies), although the success and scope of these initiatives has been varied.

Increasingly, companies are utilising internal carbon pricing as an approach to help them manage climate risks and opportunities. Companies are using this tool in a range of different ways including risk assessment in their scenario planning, as a real hurdle rate for capital investment decisions and to reveal hidden risks and opportunities in their operations. Some companies embed a carbon price deep into their corporate strategy, using it to help to deliver on climate targets, whether it be an emissions or energy related target or to help foster a new line of low-carbon products and services.

Currently 29 per cent of responding companies use internal carbon pricing, while a further 19 per cent plan to do so in the near future. By 2017, about half of this sample should have introduced carbon pricing.

Figure 6: Companies setting an internal price of carbon by sector. The total number of companies responded is presented in parentheses for each sector.



Renewable energy will need to play a major role in any global shift to a low carbon economy. So far, relatively few companies (just 5%) have targets for increasing their renewable energy generation, while 11% have targets for renewable energy consumption.

Of the companies in the utilities sector, 90% of which are electric power companies, fewer than a third have renewable energy generation targets.

Companies decoupling emissions from revenue, showing the low carbon transition does not mean low profit

A small group of companies are showing that reducing environmental impact is compatible with economic growth.

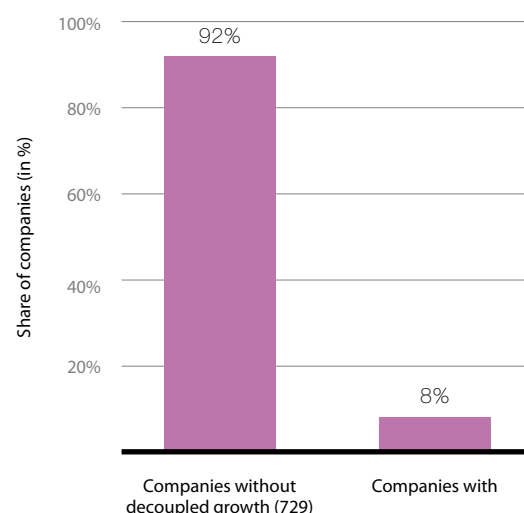
We report on the 62 companies in the sample that can be shown to have made impressive and consistent year on year achievements both in reducing emissions and decoupling growth of revenue from growth of emissions.

They include consumer staples companies such as J. Sainsbury and Walmart de Mexico, as well as utilities companies like Eversource Energy and Idacorp. The materials sector, also a heavy emissions source, is represented by the likes of Givaudan in Switzerland and Lixil in Japan.

'Decoupling' is defined for this purpose as having reduced emissions by 10 per cent or more over five years, while simultaneously growing revenue by 10 per cent.

The success of these leaders points the way for others to realise the opportunity for innovative companies to turn the challenge of emissions reduction from risk management to business success.

Figure 7: Share of companies with decoupled growth over period of five years (time-series sample)



Although correlation must not be taken to be causation, it is worth noting that the group of companies that met the "decoupled growth" criteria increased revenue by 29 per cent over the five-year period of measurement, while reducing GHG emissions by 26 per cent. For the rest of the companies in the tracking sample, revenue decreased by 6 per cent while GHG emissions increased by 6 per cent.

Switching to renewable energy or producing its own renewable energy, using internal carbon pricing to make production more efficient, using innovation to create less energy intensive systems or even selling products to help customers reduce emissions are all strategies that add to the bottom line, rather than to costs.

Figure 8: Comparison of the changes in revenues (left) and GHG emissions (right) over the 5-year period between companies that achieved decoupled growth and other companies.

Company group (no. companies)	Total revenue: (trillion current USD)		Total emissions covered for evaluation GtCO ₂ e	
	Year 1 of the 5-year period	Final year of the 5-year period	Year 1 of the 5-year period	Final year of the 5-year period
No decoupled growth (730)	17.7	16.6 (-6%)	4.82	5.08 (+6%)
Achieved decoupled growth (62)	1.31	1.70 (+29%)	0.468	0.345 (-26%)

Investor perspectives



Odd Arild,
Storebrand CEO

The investment landscape is changing rapidly: the Paris Agreement set out a clear direction of travel on climate change for global policy makers, while developments such as France's Article 173 and the forthcoming Task Force on Climate-related Disclosure are driving greater disclosure and accountability from investors. In the light of this, we ask CEOs from three leading financial institutions how their organisations are responding and where they see the key challenges over the next few years.

1. **As an investor what are your top priorities in helping to realise the goals of the Paris agreement? And how do you plan to align with policy-makers' 2 degree targets?**

Odd Arild: We have the ambition to be a leading star when it comes to sustainable investments. In Storebrand, sustainability is not a niche, it is included in our main products and services. Which means that we literally have 570 billion NOK in carbon reduction programs. We are presently setting an overall group climate target which will assist us in reaching a 2 degree world, and a 2 degree regulatory ambition.

We have three priorities. The first is about measuring, reporting and lowering our carbon footprint through CDP, Portfolio Decarbonization Coalition (PDC), and Montreal Pledge. The second priority is to work with sustainability and carbon optimization in our main pension portfolios. We're also active in financial innovation – creating one of the world's first fossil free, sustainability optimized index near funds. Our third priority is to be able to report externally in our group communication to the market on our progress towards a 2 degree world.

Philippe Desfosses: Since its inception, as part of fulfilling its fiduciary duty towards the Scheme's contributors and beneficiaries, ERAFP has been working to determine the impact of its investments on the economy, society and the environment. In coming years it will rely not only on the development of appropriate tools to manage climate challenges but also on the experience it has already accumulated, particularly in the area of de-carbonization, such as for the low-carbon equity mandate awarded to Amundi or the virtual platform, built with AM League and Cedrus AM, that managers can use to demonstrate their capacity to reduce the carbon intensity of a portfolio of international equities.

In keeping with its socially responsible investment approach, ERAFP will continue to make a major contribution, in collaboration with the various other stakeholders, to speeding up the financing of the energy transition and to exceeding the objectives laid down by the Paris treaty.

Peter Harrison: The physical impacts and social and political responses to climate change will be defining investment themes of the coming years and decades. We are focusing on building our understanding of the implications for economies, industries and companies; developing tools to support better investment decisions, and engaging companies to promote more transparent and forward-thinking responses.

2. **As an investor what are your main drivers for incorporating climate change risks and opportunities in investment decision making? And what are the main barriers?**

OA: The main drivers are the risks and opportunities facing the companies we invest in. We believe that a tilt in investments from sustainability laggards to leaders will create greater returns in our portfolios. We also have a mission to influence and support our entire sector to professionalize climate risk, through our different products, services and external engagements like the PDC. The main barrier is data access in two areas; lower quality and availability of data and lack of regulations requiring transparency and reporting on climate risk.

PD: In exchange for the contributions that it receives from its beneficiaries, the Scheme undertakes to pay them pension benefits. This is a promise that the youngest among us will benefit from following a very long period of time. It is through nothing other than observance of our fiduciary duty that we have undertaken energy and climate-related initiatives, with a view to aligning our investment portfolios with international global warming containment objectives.

A strong barrier lies in Research which still needs to be encouraged in order to develop robust indicators. It would provide at issuer level, a comprehensive picture of companies' environmental impacts and especially direct and indirect emissions. Most available methodologies only cover part of scope 3 emissions. Thus, in some sectors such as the automotive industry or the financial sector, global emissions tend to be underestimated.



Philippe Desfosses,
ERAFP CEO



Peter Harrison,
Schroders CEO



PH: Hitting the commitments our global leaders made in Paris will mean changes on a far bigger scale than financial markets seem to be preparing for, spreading beyond the most obvious sectors or niche asset classes. We need new thinking to understand how large and far reaching the impacts will be. We need to accept that perfect clarity on policies looks unlikely and focus on what we can do: better thinking, better models, better data and a clearer view of how we adapt the portfolios we manage.

3. As an investor how do you balance the needs of the present against the longer term needs of delivering investment/business strategies that avoid dangerous levels of climate change and the associated impacts of these?

OA: As a pension company, we invest for customers who will stay with us for up to 50 years. Our mission is to create the best possible retirement for our customers, both in terms of financial return, but also to support the health of the society where our customers will retire.

PD: As the French public service additional pension scheme manager, ERAFP has a very long-term responsibility towards its contributors and beneficiaries. Driven by its fiduciary duty, ERAFP prioritizes long term investments and seeks to raise the awareness about the importance of changing economic structures with a view to de-carbonization.

PH: At Schroders we have a long tradition of long term, fundamental analysis. That experience convinces us that taking account of structural trends such as climate change does not have to mean compromising shorter term performance. In fact, we are not going to be able to help our clients meet their goals, which are typically far longer than investment cycles, unless we establish long term views of critical structural trends such as climate change.

4. Environmental disclosure is a fast evolving field, how is better data, disclosure and research affecting investor decision-making?

OA: Better data is definitely improving our possibilities to make informed investments optimising return and climate risk. We supported a government bid in Sweden to standardise disclosure of carbon foot printing of mutual funds. We also support data development and availability in other areas, such as water or political instability where we in fact have developed our own system to predict a coup d'état in different countries.

PD: In 2015, with the help of a specialized organization' services, ERAFP have extended its perimeter and reported on the carbon footprint

of 87% of its total assets. Beyond its carbon footprint, ERAFP made also a comparison of the energy mix attributable to ERAFP's equity portfolio with an energy generation breakdown for the International Energy Agency's '2°C' scenarios between 2030 and 2050. The fast evolving environmental disclosure tools allow ERAFP to expand and deepen its analyses in order to develop the most efficient de-carbonization strategies.

PH: Good investment decisions rely on analysis and analysis needs data. While climate science is awash with data, most of it of little use in helping us choose one investment over another. Rigorous, relevant and consistent data at company and asset levels – like that CDP promotes and collates – is critical to our ability to get past quantifying the scale of the problem and into deciding how to navigate it.

5. What would you like to see from companies with regards to improved transparency on climate change relevant issues?

OA: We would like to see an increase in regulation when it comes to climate reporting, and higher taxes based on polluters pays principle. The real costs of operation have to be brought to the surface, so that we as investors better can adapt our investments to this.

PD: As a member of the Institutional Investors Group on Climate Change (IIGCC), ERAFP takes part in engagement initiatives towards regulatory authorities but also companies in the most exposed sectors in order to improve their climate reporting. ERAFP is also involved into the extractive industries transparency initiative (EITI). ERAFP would like companies, especially the most exposed to climate change risks, communicate on strategic resilience and their efforts to manage environmental impacts.

PH: Ours is a forward looking industry and information that provides more insight into companies' future planning will be vital; how companies assess changes in their industries, the assumptions they make, the strategies they form and the products they develop. No one has all the answers and more frank discussion on how companies approach the challenge is more important than holding on for definitive answers.

6. What role can engagement play in driving corporate behavioural change in the climate change context and how do you measure its success?

OA: Engagement plays an important role as a complement to divestment and portfolio tilting. We focus engagement within the climate areas to group activities within PRI, often initiated by CDP.

Investor Q&A

In this way we want to increase availability of data, which is our target of engagement. We can then use it to make decision on tilting and divestment.

PD: ERAFP is an extremely engaged asset owner, maintaining dialogue with many of the companies the Scheme invested in. Through its asset managers, in 2016, ERAFP supported more than 10 shareholder resolutions on climate change. ERAFP is also involved in engagement initiatives through Institutional Investors Group on Climate Change (IIGCC), ShareAction/RE100, Carbon Disclosure Project or alongside Mirova on oil exploration's themes. Forcing companies to discuss and think with a long term approach, ERAFP is convinced that asset owners' union, followed by their asset managers, will allow the acceleration of companies' change, among which the most advanced already oriented their development towards the energy transition.

PH: Engagement is a key part of our responsibilities as responsible, active investors. We regularly talk to management teams about why we think climate change is an important issue, as well as our expectations for disclosure and transparency. That work is intrinsically tied up with how we approach investing and the benefits are evident in the decisions we make and the changes we see in companies.

7. If we were to have a similar conversation in three years time, what do you think would be some of the key successes for an investor in managing climate change risks and opportunities?

OA: Integration. Integration of competence, and tools. Managing climate risk must be at the core of the investment strategy covering all assets in all assets classes and not seen as a side activity for certain SRI funds. The global pension capital consists of the 40 000 billion USD – that is the money we need to get to work if we want to create a better, more sustainable future.

PD: Because you can't manage what you don't measure, ERAFP thinks that a crucial key of success consists in good measures of its investment climate related risks. ERAFP is working on it using and questioning current carbon foot-printing methodologies. Working with its asset managers on portfolio decarbonization approaches, disclosing the results of its work on these areas and engaging with companies on carbon disclosure are other keys that ERAFP use to manage climate risks and opportunities.

PH: We have to build better tools to measure, quantify and analyse the risks and opportunities climate changes represents to companies and portfolios. Unless we can do that, we are going to struggle to know if we are on the right track. Progress has been made with things like carbon

footprinting, but we are in the foothills of what needs to be done.

8. How are you engaging with the Sustainable Development Goals 2030 agenda?

OA: SDG sets a clear direction on what the focus should be to reach a more sustainable future. We now work to integrate the SDGs in our strategy and targets, so that we ensure that the company's strategy is in line with the goals of the world. Already in 2016 we will as a group start to report on our contribution to the SDGs.

PD: In line with its socially responsible investor's status since its beginning, ERAFP has developed a best in class strategy. This approach has had positive results since ERAFP's portfolio is globally more carbon efficient than its benchmark. By selecting the most sustainable players but also being a strongly engaged investor on ESG issues, ERAFP aims to contribute to the Sustainable Development Goals agenda 2030. Its recent signing of the Energy Efficiency Investor Statement at COP 21 and of the 2016 global investor letter to the G20 are examples of its ongoing efforts to limit climate change and promote a Sustainable Development.

PH: The Sustainable Development Goals highlight the changes we are seeing in social and political awareness of the challenges facing many of the world's poorest countries and people. This backdrop of growing awareness and commitment will have direct implications for how we manage money. We are working hard to build an understanding of the potential changes into our decision making.

Custom questions

Storebrand is in the unique position of facing the risk of increased claims from climate change as well as the risks of decreased portfolio returns from it. How do your investment activities reduce the risk of increased claims from climate change?

OA: Companies with significant greenhouse gas emissions often make for poor financial investments. In order to make it easier to identify the companies we wish to invest in, we rate potential companies according to how sustainable they are. The environmental impact is a decisive factor when we make our assessment, which makes it easier to pinpoint which companies we do not wish to invest in. We also have an exclusion policy on negative environmental impact, with exclusion of for example more than 60 companies based on their poor climate record.

We also work in the area of financial innovation, and have launched a number of products recently.

They are important not only to our customers, but also as examples to inspire and show our sector what is really possible. SPP/Storebrand presently have the world's largest green bond fund. We have also launched a unique series of products: a near index equity mutual fund that is fossil free, and optimised for a high sustainability level of the remaining companies. We are able to deliver a low tracking error in comparison to 'standard' indices, a low fee, and a substantially lower climate related risk.

In ERAFP's "Combating Climate Change" approach it says that in order to meet the ambitions of the SRI charter in limiting greenhouse gas emissions investors should "provide tangible evidence of their approaches impact". What is your view on the current state of Asset Manager's ability to provide this?

PD: ERAFP discusses with its asset managers to understand their portfolio companies' management and improves it. This year, ERAFP has entered into an agreement with Cedrus AM and AM League to establish a framework that asset managers can use to demonstrate their know-how in the reduction of carbon intensity by applying their expertise in the management of a notional portfolio of international equities. In the coming months, with the benefit

of the Cedrus AM return of experience, ERAFP will be working on ways to extend its "low carbon" management approach, either through investment in open funds or through a call for tenders to select an asset manager to create a dedicated fund.

Schroder's Chief Economist recently published the findings of a survey of 18 Chief Economists. Its finding was pretty bleak in terms of the level of integration of climate change risk into their forecasting process. What impacts, in your opinion, do you think that this lack of macro-level analysis will have on the effective integration of climate change risks into the investment process?

PH: Although it was disappointing that more of the City's economists don't build climate trends into their forecasts, it was not altogether surprising. The problem lies with tools and models as much as awareness; most in our industry know the scale of the challenge and the impacts it will have, but the potential dislocation does not fit easily with models that are designed around linear trends. Unless we can come up with better ways of analysing the financial implications of climate change, we are going to find it hard to avoid being surprised down the line.

A message from TCFD member

The Financial Stability Board (FSB), which monitors the stability of the international financial system, initiated the Taskforce on Climate-related Financial Disclosures (TCFD) in late 2015. The FSB TCFD, an industry-led initiative, will produce a set of recommendations to enhance voluntary disclosure on climate-related risks and opportunities through mainstream financial reporting, by December 2016.

The FSB TCFD's objective is to promote climate-related corporate disclosures to support informed investment and credit decisions, and simultaneously, to enable a variety of stakeholders to understand the concentrations of carbon-related assets in the financial sector and financial system's exposures to climate-related risk. The FSB identified physical risk, liability risk and transition risk as major categories of climate-related risks whose enhanced transparency would be beneficial to stabilizing the overall financial system.

Basic components of the TCFD's forthcoming recommendations include how climate-related risks and opportunities are taken up by the board and the management, how they are embedded in the corporate strategy and risk management, and what metrics and targets are used to put them into practice. One of the notable differences from the existing climate-related disclosure frameworks is the emphasis on forward-looking information which is natural considering the characteristics of climate change. Methodologies such as scenario analysis are seen as effective means to enable forward-looking assessments.

CDP's well-established methodologies in capturing climate-related risks and opportunities are not only respected under the TCFD's recommendations but useful in its implementation.

In Japan, where many corporate entities participate in CDP, I am hopeful that the work of TCFD will gain attention from its launch, advance the climate-related disclosure practice, and contribute to the reinforcement of corporate Japan's international competitiveness for their energy efficiency.

Masaaki Nagamura, TCFD member
(General Manager, Corporate Social Responsibility, Corporate Planning Department
Tokio Marine Holdings, Inc.)

Weather Index Insurance in Southeast Asia

The Sompo Holdings Group offers insurance products aiming at reducing agricultural management risks in Southeast Asia, where agriculture, which is susceptible to climate change impact, is the main industry.

We began providing weather index insurance in Northeast Thailand in 2010 to alleviate the losses borne by rice farmers when their crops were damaged by drought. We have currently expanded the sales area to every province in Northeast Thailand. We also launched in 2014 Typhoon Guard Insurance for agricultural producers in the Philippines to cover the risk of losses from the typhoon. We are also developing an insurance product to launch in Myanmar to alleviate the losses due to drought in the central arid region, and similar products for Indonesia.

SOMPO Holdings



Explanation of products to Thai farmers



Hearing survey in Myanmar

BUSINESS CALL TO ACTION

Approved as a member of the BCTA alliance led by the UNDP (2015).

Received Japan's Environment Minister's Award for demonstrating the Principles for Financial Action towards a Sustainable Society.

Received the Minister of State for Space Policy Prize, at the Second Space Development and Utilization Grand Prize presentation for our initiatives in Myanmar.

CDP 2016 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 complete training 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 2016, 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.



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



North America*



Central and Eastern Europe (CEE)



China



France



Japan, Latin America, Turkey



Japan, Korea



Brazil



Korea



Japan



Iberia (Spain & Portugal)



All regions



Japan

*Aligned Incentives are retained as an alternative scoring partner in the event of a conflict of interest.

Featured Profile : Mitsubishi Electric



The Mitsubishi Electric Group operates in a wide range of business areas, from home products to equipment and systems for use in outer space. This is all run under its corporate mission; "The Mitsubishi Electric Group will continue to improve its technologies and services by applying creativity to all aspects of its business. By doing so, we enhance the quality of life in our society."

Carrying out its initiatives to reduce the volume of CO2 emitted during production activities, we are making a significant contribution to create a low-carbon society by improving energy-saving ability in all its products and systems, which we believe is the most expected to the Mitsubishi Electric Group. The volume of CO2 emissions suppressed a year is about 50 times that of the CO2 emitted during activities at business sites according to our original estimation.

While proposing to become a global leading green company, a company that contributes to establish an affluent society where both a sustainable society and safe, secure, and comfortable lifestyles are simultaneously existed, The Mitsubishi Electric Group aims to achieve our management targets of five trillion yen or more in consolidated sales and operating margins of 8% or more by FY2021.

Hideyuki Okubo

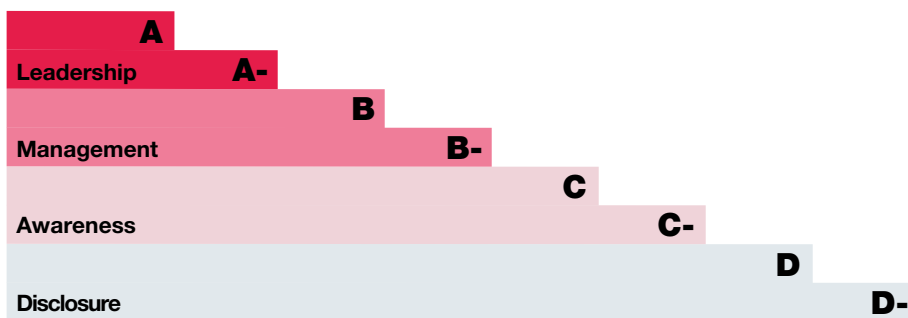
Representative Executive Officer
Executive Vice President



Communicating progress

Central to CDP's mission is communicating the progress companies have made in addressing environmental issues, and highlighting where risks may be unmanaged. In order to do so in a more intuitive way, CDP has adopted a streamlined approach to presenting scores in 2016. This new way to present scores measures a company's progress towards leadership using a 4 step approach: **Disclosure** which measures the completeness of the company's response; **Awareness**

considers the extent to which the company has assessed environmental issues, risks and impacts in relation to its business; **Management** which is a measure of the extent to which the company has implemented actions, policies and strategies to address environmental issues; and **Leadership** which looks for particular steps a company has taken which represent best practice in the field of environmental management.



Leadership	75-100%	A
	0-74%	A-
Management	40-74%	B
	0-39%	B-
Awareness	40-74%	C
	0-39%	C-
Disclosure	40-74%	D
	0-39%	D-

F: Failure to provide sufficient information to CDP to be evaluated for this purpose¹

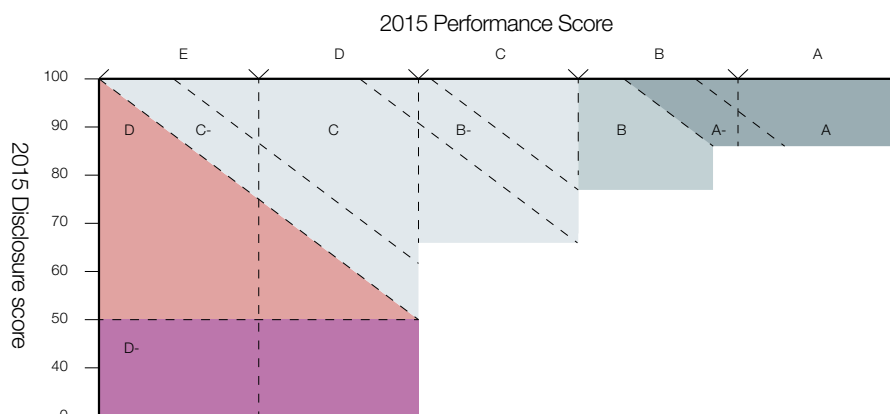
¹ Not all companies requested to respond to CDP do so. Companies who are requested to disclose their data and fail to do so, or fail to provide sufficient information to CDP to be evaluated will receive an F. An F does not indicate a failure in environmental stewardship.

The scoring methodology clearly outlines how many points are allocated for each question and at the end of scoring, the number of points a company has been awarded per level is divided by the maximum number that could have been awarded. The fraction is then converted to a percentage by multiplying by 100 and rounded to the nearest whole number. A minimum score of 75%, and/or the presence of a minimum number of indicators on one level will be required in order to be assessed on the next level. If the minimum score threshold is not achieved, the company will not be scored on the next level.

The final letter grade is awarded based on the score obtained in the highest achieved level. For example, Company XYZ achieved 88% in Disclosure level, 76% in Awareness and 65% in Management will receive a B. If a company obtains less than 40% in its highest achieved level, its letter score will have a minus. For

example, Company 123 achieved 76% in Disclosure level and 38% in Awareness level resulting in a C-. However, a company must achieve over 75% in Leadership to be eligible for an A and thus be part of the A List, which represents the highest scoring companies. In order to be part of the A-list a company must score 75% in Leadership, not report any significant exclusions in emissions and have at least 70% of its scope 1 and scope 2 emissions verified by a third party verifier using one of the accepted verification standards as outlined in the scoring methodology.

Public scores are available in CDP reports, through Bloomberg terminals, Google Finance and Deutsche Boerse's website. CDP operates a strict conflict of interest policy with regards to scoring and this can be viewed at <https://www.cdp.net/Documents/Guidance/2016/CDP-2016-Conflict-of-Interest-Policy.pdf>



Comparing scores from previous years.

It is important to note that the 2016 scoring approach is fundamentally different from 2015, and different information is requested, so 2015 and 2016 scores are not directly comparable. However we have developed a visual representation which provides some indication on how 2015 scores might translate into 2016 scores. To use this table a company can place its score in the table and see in which range it falls into in the current scoring levels. For more detailed instructions please refer to our webinar: <https://vimeo.com/162087170>.

The Climate A List 2016

Company	Country
Consumer Discretionary	
ARÇELİK A.Ş.	Turkey
BMW AG	Germany
Caesars Entertainment	USA
Daimler AG	Germany
Electrolux	Sweden
Fiat Chrysler Automobiles NV	Italy
Gap Inc.	USA
General Motors Company	USA
Groupe PSA	France
Hyundai Motor Co	South Korea
Inditex	Spain
Johnson Controls	USA
Las Vegas Sands Corporation	USA
LG Electronics	South Korea
Michelin	France
Nissan Motor Co., Ltd.	Japan
RELX Group	United Kingdom
Renault	France
Sky plc	United Kingdom
Sony Corporation	Japan
Sumitomo Forestry Co., Ltd.	Japan
Toyota Motor Corporation	Japan
TUI Group	United Kingdom
Yokohama Rubber Company, Limited	Japan
Consumer Staples	
Asahi Group Holdings, Ltd.	Japan
Coca-Cola European Partners*	USA
Coca-Cola HBC AG	Switzerland
Colgate Palmolive Company	USA
Diageo Plc	United Kingdom
Japan Tobacco Inc.	Japan
Kirin Holdings Co Ltd	Japan
L'Oréal	France
Nestlé	Switzerland
Philip Morris International	USA
Pick 'n Pay Stores Ltd	South Africa
RCL Foods Ltd	South Africa

Company	Country
Reynolds American Inc.	USA
SCA	Sweden
Tesco	United Kingdom
Unilever plc	United Kingdom
Energy	
Compañía Española de Petróleos, S.A.U. CEPSA	Spain
Eni SpALimited	Italy
Galp Energia SGPS SA	Portugal
Neste Corporation	Finland
Statoil ASA	Norway
Vermilion Energy Inc.	Canada
Financials	
Bank Coop AG	Switzerland
Basler Kantonalbank	Switzerland
BNY Mellon	USA
British Land Company	United Kingdom
Caixa Geral de Depósitos	Portugal
CaixaBank	Spain
Daito Trust Construction Co., Ltd.	Japan
Dexus Property Group	Australia
Goldman Sachs Group Inc.	USA
Great-West Lifeco Inc.	Canada
Host Hotels & Resorts, Inc.	USA
HSBC Holdings plc	United Kingdom
ICADE	France
ING Group	Netherlands
Intesa Sanpaolo S.p.A	Italy
Klepierre	France
Lloyds Banking Group	United Kingdom
Macerich Co.	USA
MAPFRE	Spain
National Australia Bank	Australia
Nedbank Limited	South Africa
Raiffeisen Bank International AG	Austria
Remgro	South Africa
Shinhan Financial Group	South Korea
Sompo Japan Nipponkoa Holdings, Inc	Japan

*Data provided in response relates to Coca-Cola Enterprises, prior to merger with Coca-Cola European Partners.

Company	Country
Stockland	Australia
T.GARANTİ BANKASI A.Ş.	Turkey
The Dai-ichi Life Insurance Company,	Japan
UBS	Switzerland
Westpac Banking Corporation	Australia

Health Care

AstraZeneca	United Kingdom
Bayer AG	Germany
GlaxoSmithKline	United Kingdom
Lundbeck A/S	Denmark
Mediclinic International	South Africa
Novo Nordisk A/S	Denmark
Roche Holding AG	Switzerland

Industrials

Abengoa	Spain
Abertis Infraestructuras	Spain
Bic	France
Bouygues	France
Canadian National Railway Company	Canada
CNH Industrial NV	United Kingdom
Ecorodovias Infraestruturas e Logística S.A	Brazil
FERROVIAL	Spain
Grupo Logista	Spain
Huber + Suhner AG	Switzerland
Hyundai E&C	South Korea
INDUS Holding AG	Germany
Kajima Corporation	Japan
Kawasaki Kisen Kaisha, Ltd.	Japan
Kingspan Group PLC	Ireland
Komatsu Ltd.	Japan
Kone Oyj	Finland
Lockheed Martin Corporation	USA
Mitsubishi Electric Corporation	Japan
Nabtesco Corporation	Japan
Obrascon Huarte Lain (OHL)	Spain
Owens Corning	USA
Qantas Airways	Australia

Company	Country
Republic Services, Inc.	USA
Royal BAM Group nv	Netherlands
Royal Philips	Netherlands
Salini Impregilo S.p.A.	Italy
Samsung C&T	South Korea
Samsung Engineering	South Korea
Schneider Electric	France
Secom Co., Ltd.	Japan
SGS SA	Switzerland
Skanska AB	Sweden
Stanley Black & Decker, Inc.	USA
Taisei Corporation	Japan
Toda Corporation	Japan
Toshiba Corporation	Japan
Union Pacific Corporation	USA
Valmet	Finland
Waste Management, Inc.	USA

Information Technology

Accenture	Ireland
Advanced Semiconductor Engineering	Taiwan
Alphabet, Inc.	USA
Amadeus IT Holding	Spain
Apple Inc.	USA
Atos SE	France
Autodesk, Inc.	USA
Canon Inc.	Japan
Cisco Systems, Inc.	USA
EMC Corporation	USA
EVRY ASA	Norway
Hewlett-Packard	USA
Konica Minolta, Inc.	Japan
LG Display	South Korea
LG Innotek	South Korea
Microsoft Corporation	USA
Oracle Corporation	USA
Samsung Electronics	South Korea
Tech Mahindra	India
Wipro	India

Company	Country
Materials	
AkzoNobel	Netherlands
Anglo American Platinum	South Africa
BillerudKorsnäs	Sweden
Braskem S/A	Brazil
Gold Fields Limited	South Africa
Harmony Gold Mining Co Ltd	South Africa
HeidelbergCement AG	Germany
International Flavors & Fragrances Inc.	USA
Koninklijke DSM	Netherlands
Kumba Iron Ore	South Africa
LANXESS AG	Germany
LG Chem Ltd	South Korea
Metsä Board	Finland
Mondi PLC	United Kingdom
Novozymes A/S	Denmark
Praxair, Inc.	USA
Sealed Air Corp.	USA
Sibanye Gold Ltd	South Africa
Stora Enso Oyj	Finland
Symrise AG	Germany
The Mosaic Company	USA
ThyssenKrupp AG	Germany
UPM-Kymmene Corporation	Finland

Telecommunication Services	
China Mobile	China
Deutsche Telekom AG	Germany
Koninklijke KPN NV (Royal KPN)	Netherlands
KT Corporation	South Korea
LG Uplus	South Korea
Proximus	Belgium
Swisscom	Switzerland
Telefonica	Spain
Telstra Corporation	Australia

Utilities	
ACCIONA S.A.	Spain
Centrica	United Kingdom

Company	Country
EDF	France
EDP - Energias de Portugal S.A.	Portugal
ENAGAS	Spain
ENEL SpA	Italy
ENGIE	France
Gas Natural SDG SA	Spain
Iberdrola SA	Spain
Iren SpA	Italy
Korea District Heating Corp.	South Korea
Korea Electric Power Corp	South Korea
National Grid PLC	United Kingdom
PG&E Corporation	USA
R.E.E.	Spain
Snam S.P.A	Italy
Suez Environnement	France
VEOLIA	France
VERBUND AG	Austria

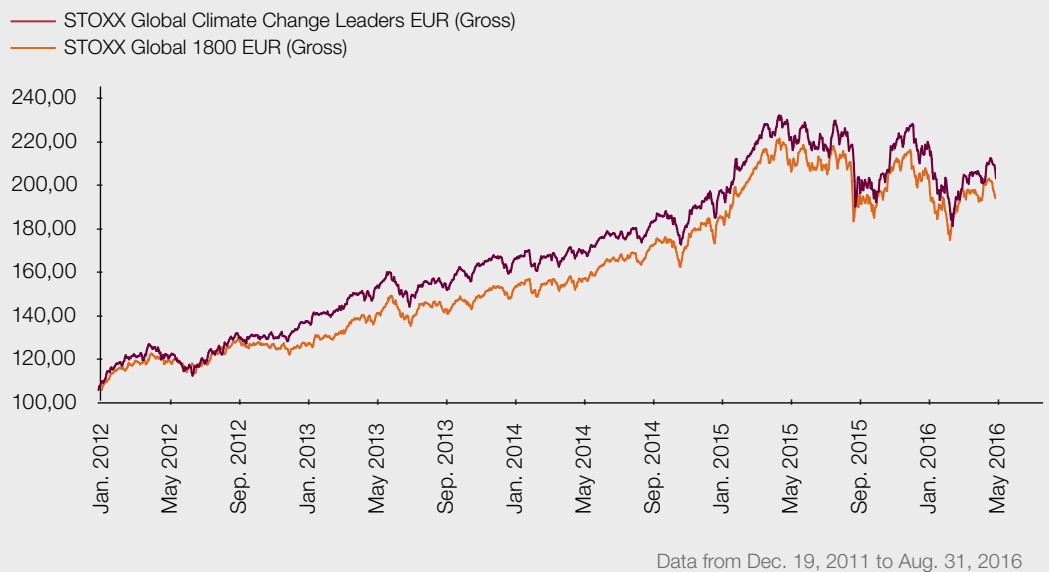
Investing in CDP's Global Climate A List: strong performance by climate change leaders

6%

**higher returns
over past 4 years**

STOXX® Low Carbon Indices provide easy new way to climate-friendly and attractive returns

Performance STOXX Global Climate Change Leaders vs. STOXX Global 1800



This year CDP collaborated with STOXX® and South Pole Group on the development of a new series of low-carbon indices, one of which now makes investing in CDP's A List companies very easy: The STOXX® Global Climate Change Leaders Index.

STOXX® Climate Change Leaders Index is the first ever that tracks the CDP "A List" available to market participants offering a fully transparent and tailored solution to address long-term climate risks, while participating in the sustainable growth of a low-carbon economy.

The index has performed strongly against a global benchmark, outperforming by 6% over 4 years.

Being based on the CDP "A List" database, this unique index concept includes carbon leaders who are publicly committed to reducing their carbon footprint.¹

Key benefits for investors:

- Constituents are forward-looking leaders with superior climate change mitigation strategies and commitments to reducing carbon emissions
- In addition to Scope 1 & Scope 2, also incorporates Scope 3 data
- Significantly lower carbon footprint¹ (>80%) while still containing high emitters
- Similar risk-return profiles compared to the benchmark
- Use reported carbon intensity data only
- Could be used for engagement supporting the < Aiming for A Coalition >

CDP is looking forward to contributing to innovative solutions that can add real value for investors in the future.

Our Climate A List comprises a strong set of companies who lead on climate change mitigation today and in the future. It is exciting to see the rising investor interest in the STOXX® Global Climate Change Leaders Index.

¹ The index is price weighted with a weight factor based on the free-float market cap multiplied by the corresponding Z-score carbon intensity factor of each constituent. Components with lower carbon intensities are overweighted, while those with higher carbon emission are underweighted.

Japanese company response to CDP 2016

53%

**Japan 500
response rate
(265/500)**

In 2016, the CDP survey on climate change is now in its 14th iteration globally, and its 11th for Japan. The questionnaires were sent to only 150 Japanese companies in the years 2006 to 2008. This has now been expanded to 500 companies since 2009, and since 2011, the questionnaires have been sent to the selected 500 companies (the Japan 500) based on FTSE Japan Index.

Overview of responses

The number of the Japan 500 that responded to the climate change program this year reached 265 - a response rate of 53% (including those responding by group parent companies). This response rate compared to 49% last year and 47% the year before, is continuously improving. In comparison with other regions, however Japan 500 is slightly behind as 76% of Global 500, 63% of British FTSE350, and 65% of US S&P500 responded this year.

Response rate by sector did not change significantly from the last year (Figure 1). In the sectors of Information Technology, Materials and Telecommunication Services (with small number of companies), the response rate exceeded 60%. In the Utilities sector, the response rate was 31%, the lowest for any sector and it stayed the same as last year. Considering no electric power provider responded last year, it is a good news that one electric provider responded this year. However, in general the Utilities sector is not actively responding. We would like to see the sector to be more positive in information disclosure, as many of its stakeholders are interested in the deregulation of electric power and the situation of the introduction of renewable energy.

In this report, response details of the Japan 500 were analysed as follows:

Evaluation Score

The scoring methodology was changed this year. Companies received two scores, one for disclosure (numeric value) and one for performance (band) in the last year, whereas only one score (band) was used this year. The scoring methodology is a staged evaluation in the phases of disclosure, awareness, management and leadership. As each phase is cleared, the band advances. The band is graded from A to D-.

22 companies (9%) ranked as the top band A, 59 companies (24%) as A-, 83 companies (33%) as B/B- (the majority of the companies are placed within this band). It is difficult to simply compare, but it should be noted that companies with high scores increased dramatically this year, only 16 companies gained an A or A- performance band last year.

Compared with overseas, 18 % of the Global 500 ranked as A and 27% as A-, which seems to be high. The Japan 500 had high scoring companies in the

same percentage with US S&P, and higher than the UK FTSE350 (Figure 3). It would therefore be considered reasonable to say that the Japan 500 have an equal level in response quality although the response rate is slightly less.

Some companies' responses showed lack of understanding of some questions. There also seems to be some confusion in answering the newly introduced questions, however, in general, question understanding and response style improved, and many Japanese companies' responses to CDP has become mature. Although verification of emissions data has been common for the past few years, there are some cases among high scoring companies that still achieve insufficient scores in this area as there is deficiencies either in the scope of the verification or with the assurance statement. It is presumed companies with low scores may have limited experience in responding, but making the first step to respond should be valued. We expect them to continue to respond and make improvement in response content in future.

Companies that made their information private were 23%. This showed a slight improvement, compared to 27% last year, yet still one quarter of companies made their information private, which is disappointing (Figure 4). Making the response publically available is one of the criteria to be included in the leadership index, but there were 14% of A- companies and 22% of B companies that made their information private, which is a disappointing result. Following the concept of CDP information disclosure on climate change, disclosure of responded information should be required as a premise of engagement, and we expect this should also be improved.

Score distribution by sector is shown in Figure 2. Consumer Discretionary, Consumer Staples, Industrials, Telecommunication Services and the Utilities sectors had relatively high scores. This may be because Telecommunication Services and the Utilities sectors have a small number of target companies and scores of these responding companies were high. The same trend was seen last year and there is not a great change.

With regards to emissions, 100 companies (40%) reported that their Scope 1 and Scope 2 emissions increased in total compared to last year, and 137 companies (55%) reported that their emissions had decreased. In the 2015 responses, 117 companies (50%) reported an increase, whereas 116 companies (49%) reported a decrease. The overall result of Japanese companies still implies that actions to reduce emissions have not reached a robust achievement, although the number of companies reporting a reduction of emissions has increased.

22

**A list Japanese
Companies**

Figure 1. Number of respondents by industrial sector

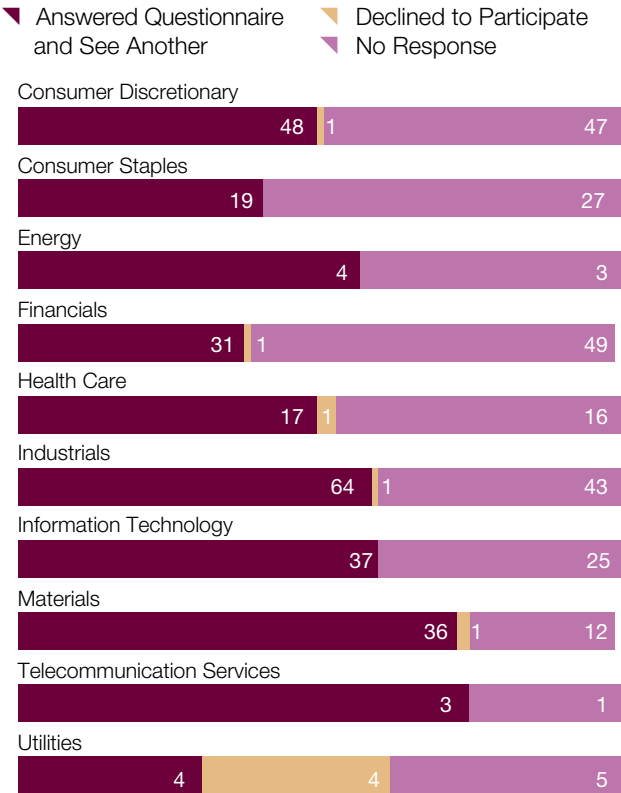


Figure 2. Score by industrial sector

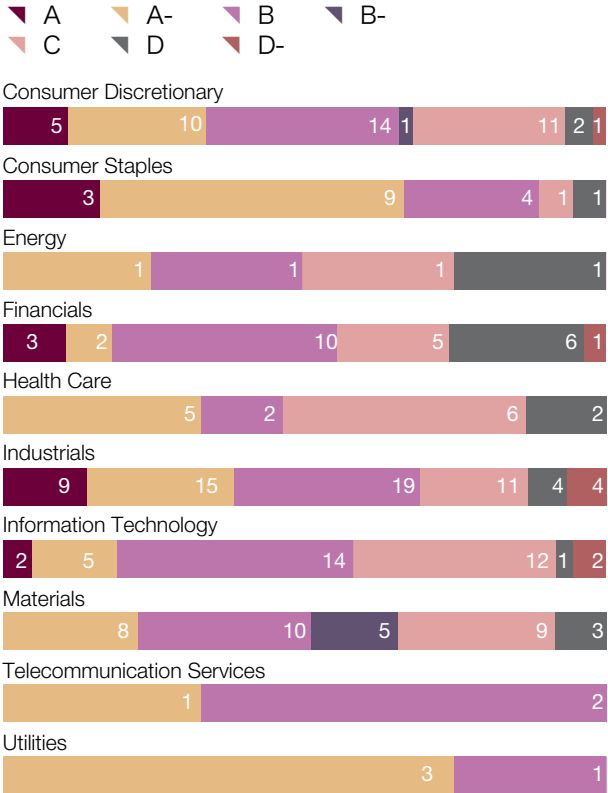


Figure 3. Scores distribution of Japan, UK, US and Global 500

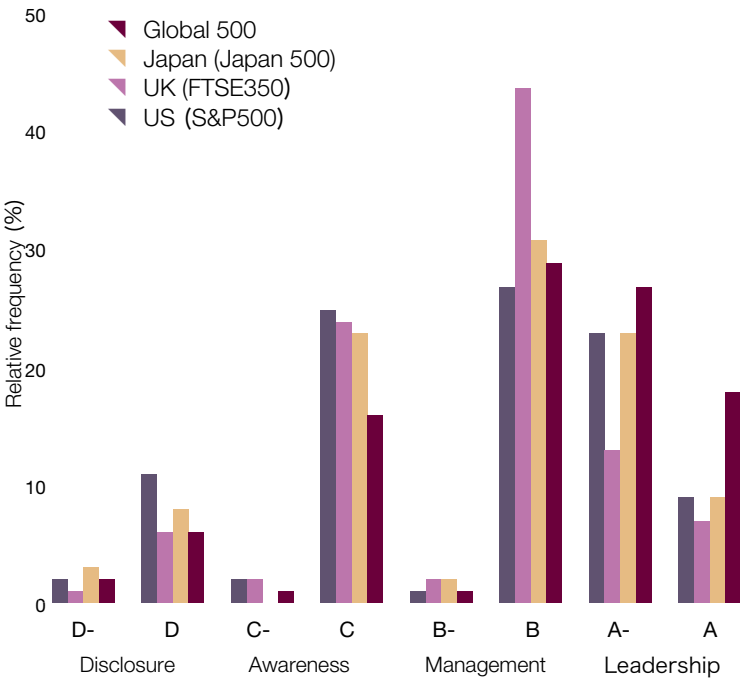
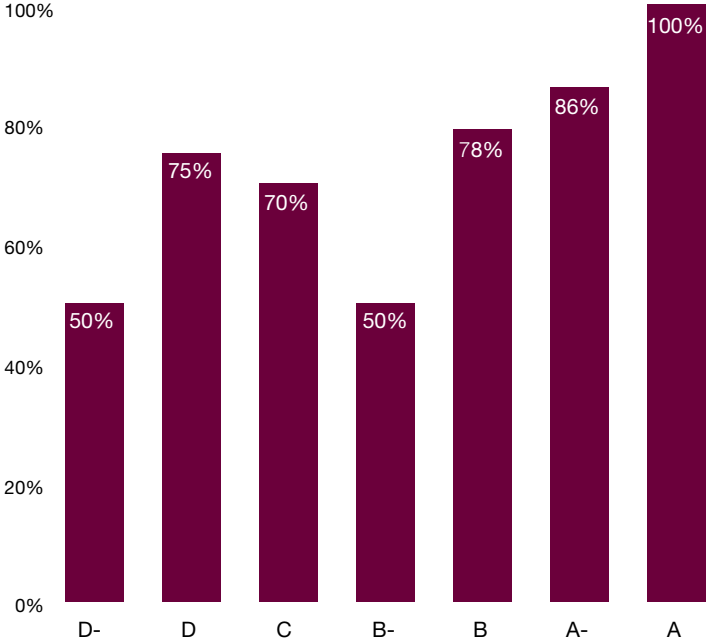


Figure 4. Public response rate by score



Risks driven by changes in physical climate parameters was answered as “within 1 year” as the most common answer, which implies that physical risk associated with climate change is recognized as a “clear and present danger” as actual damage is reported by many companies.

Governance, Risk and Opportunity

Since the Corporate Governance Code was implemented last year, it is very interesting what changes can be seen in the positioning of climate change issues in corporate governance.

To Question (CC1.1) regarding governance of climate change issues in the CDP questionnaire, “Where is the highest level of direct responsibility for climate change within your organization?” – 239 companies (96%) responded that it is “Board or individual/sub-set of the Board or other committee appointed by the Board”, and almost all companies reported that they assigned high level responsibility. In comparison with last year, as the number of responding companies has increased, the percentage has dropped from 99%.

On the other hand, Question (CC1.2) “Who is entitled to benefit from these incentives?” – only 43 companies responded that it was board director level - the same trend as last year.

Responses corresponding to Question (CC15.1) for CDP response approval, remain at 122 companies (49%) that board director level or CEO, CFO, COO approved the response.

A comparison of these results implies a situation where board director level representatives have responsibilities but they are not entitled to benefit from incentives in many cases. In half of companies it is not clear to demonstrate that they are aware of the CDP responses.

There may be some linkage with the result that absolute emissions of Scope 1 and 2 are not in a decreasing trend. In view of this, there is no evidence that Governance for climate change issues works effectively, and this is still a future improvement point.

Concerning awareness of risks and opportunities, where investors are keenly interested, it is shown how they are perceived with the timeline in Figure 5.

When it comes to risks, most companies chose “more than 6 years” for risks driven by changes in regulation, followed by “within 1 year”, i.e., there are currently tangible signs for that risk. On the other hand, Risks driven by changes in physical climate parameters was answered as “within 1 year” as the most common answer, which implies that physical risk associated with climate change is recognized as a “clear and present danger” as actual damage is reported by many companies.

Risks are recognized as long-term (more than 6 years) as well as short-term (within 1 year), while opportunities are recognized as short-term only (within 1 year, or 1 to 3 years). It can be seen that many companies view climate change issues as an opportunity, have a practical business vision and already start to take actions.

When it comes to how such risks and opportunities are identified (CC2.1), 216 companies (87%) answered, “it is integrated in company-wide risk management process”, in a very high percentage. On the other hand,

Figure 5. Timeframe for risks and opportunities materializing

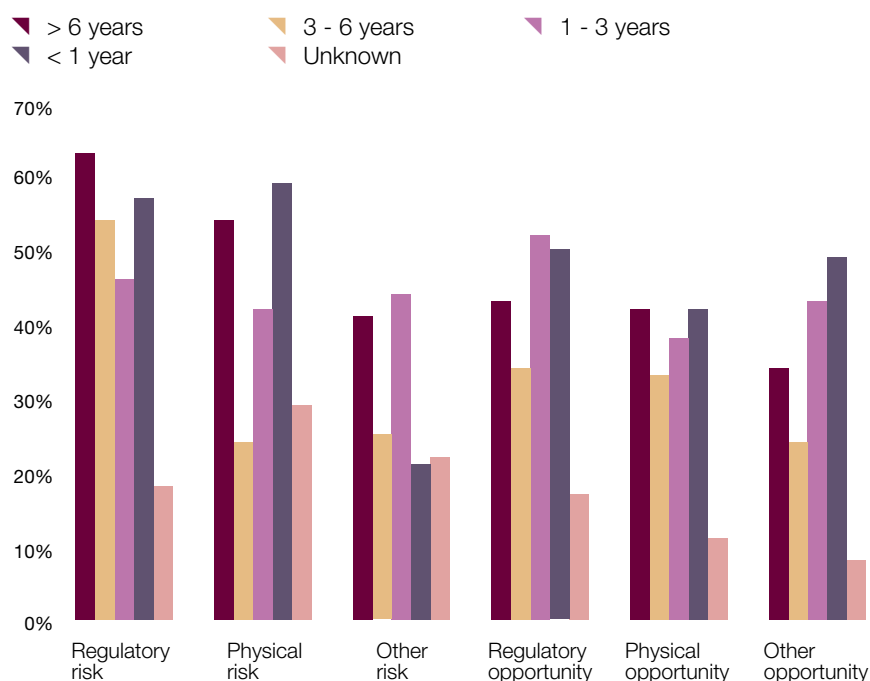
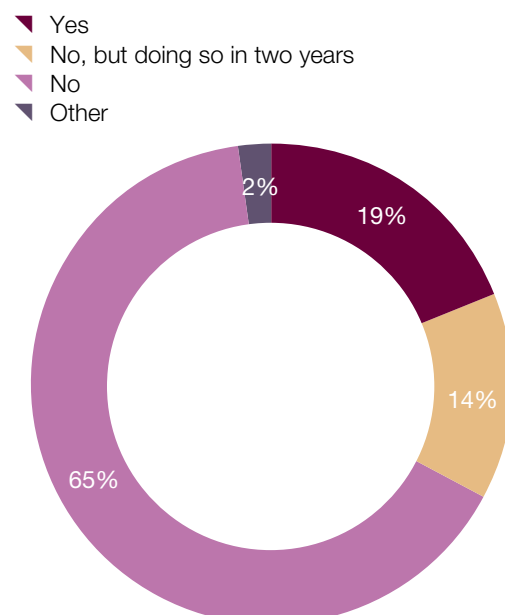


Figure 6. Company using an internal carbon pricing



50%

more than 50% of companies were positive to introduce SBT

as for whether carbon pricing is introduced in the company (CC2.2c), 19% have already introduced carbon pricing, 14% is considering it within 2 years, yet the total has not reached a majority (Figure 6). Carbon pricing seems to be an effective way to manage by company-wide common standard, however, currently this has not necessarily become common for Japanese companies.

Scope 2 and Target

A big change in the 2016 climate change questionnaire compared with last year, was how to calculate Scope 2 emissions (location base, or market based) in accordance with the GHG Protocol. Furthermore, Science Based Targets (SBT) have also been introduced. We will look at how companies reacted to these new items.

Regarding the calculation method for Scope 2 emissions (CC8.3a), 173 (75%) used the location-based method, while 99 (43%) used the market-based method. The reason why this total exceeds 100% is that some companies disclosed both figures. The market-based calculation is newly applied in the CDP questionnaire, but we presume that many companies have applied the market-based calculation before. However, it is still difficult to judge precisely with the current questions and disclosed contents.

With regards to the emissions reduction target, 168 companies (68%) had an absolute emission target, and 169 companies (68%) had an intensity target (Figure 7, 8) (some companies had both). Moreover,

42 companies (17%) had a renewable energy target, from which the implementation of renewable energy can be observed as one of the companies' important policies.

Among the companies with an absolute emissions target, 30 companies (10%) applied science-based targets (SBT), 147 companies (51%) anticipate doing so within 2 years. Among the companies with an intensity target, already 44 companies (14%) have applied SBT, and 110 companies (36%) anticipate doing so within 2 years. There was a gap in the trend between absolute emissions targets and intensity targets, but more than 50% of companies were positive to introduce SBT for both targets.

Details of these targets are as follows: Scope 2 location-based was used by 142 companies (49%) for absolute targets, whilst by 156 companies (51%) for intensity targets. The market-based approach was used by 101 companies (35%) for absolute targets, and by 88 companies (29%) for intensity targets. As reported above, the result is linked with the fact that 43% of companies reported using a market-based method. In the future, how to maintain consistency in calculation method, historic data continuity and intermediate objective setting, and how to achieve an easy-to-follow disclosure will be the next challenge. In addition, Scope 3 emissions objectives (part or all) were set by 57 companies (20%) for absolute targets and by 54 companies (18%) for intensity targets, which implies that the companies considering their value chain in their targets has increased.

Figure 7. Companies with absolute target who apply SBT

- Yes
- No, but anticipate doing so within 2 years
- No
- Unknown

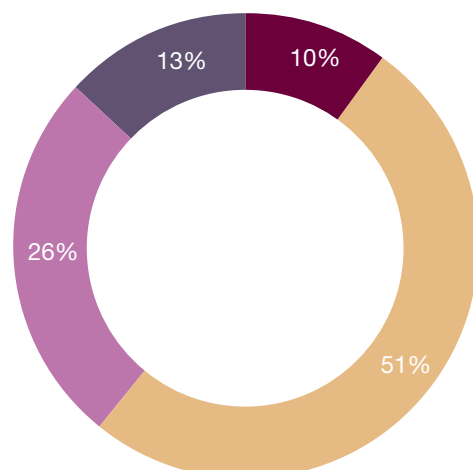
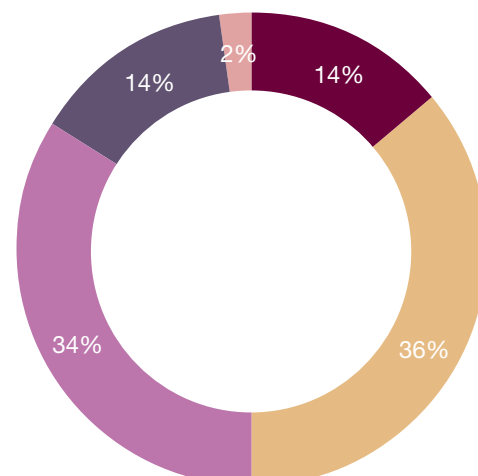


Figure 7. Companies with intensity target who apply SBT

- Yes
- No, but anticipate doing so within 2 years
- No
- Unknown
- No response



It can be said that the importance of the value chain activities is getting greater recognition among the responding companies

The level of responding companies has greatly improved, and the trend is towards clear bipolarization between responding companies and non-responding companies.

The result to question (CC14.4), which partners to engage with to reduce emissions in the value chain and to work with for climate change strategy, is shown in Figure 9. 59% of companies replied with their suppliers, 42% with engagement with customers, and only 17% responded with no engagement.

It can be said that the importance of the value chain activities is getting greater recognition among the responding companies, even though they have not yet set Scope 3 targets.

Conclusion

The Japan 500 response rate this year has reached 53%, with voluntarily responding companies having also increased steadily. This implies that ESG investment is considered as common options in Japan, as symbolized by the introduction of the Responsible Investment Principle of Government Pension Investment Fund (GPIF) and Stewardship Code.

However, there are still many companies which make their information private despite responding. We expect that the response rate will be improved based on feedback from CDP evaluation, and also that response details will be shared publically from the transparency point of view. The level of responding companies has greatly improved, and the trend is towards clear bipolarization between responding companies and non-responding companies.

As for the scores of responding companies, 32% of companies achieved high scores of A or A-, which shows steady improvement in response quality by

Japanese companies. They understand how to respond to CDP, and most companies have made their responses publically available. However, 23% of responding companies made their information private, which is a disappointing result.

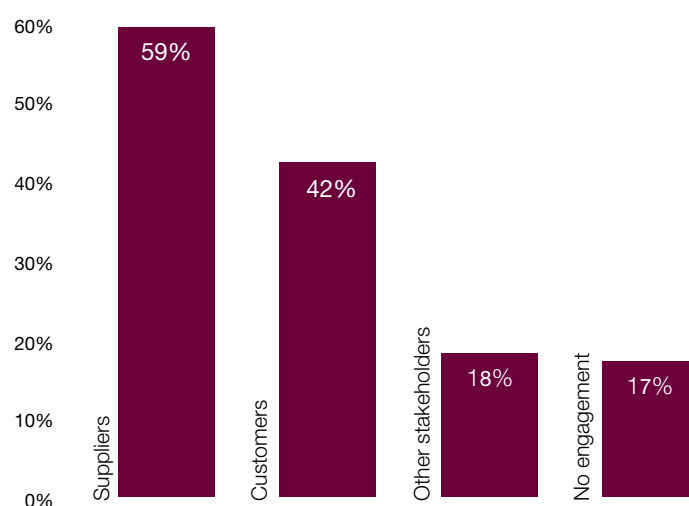
Conversely, Governance on climate change issues is not necessarily affected by the Corporate Governance Code. Regarding the responsibility for climate change issues, although board director level representatives participate in most companies, the incentive or perception of CDP response remained at a low level, and there was not much progress since last year, where challenge still exists.

Understanding of risks and opportunities grows, and the timeframe for risks and opportunities were also recognized. To put it in perspective, opportunities were particularly confirmed as a shorter-term challenge for business compared to risks.

Although the Scope 2 emissions market-based method was a new addition to the questionnaire this year, the approach was used by many companies. Moreover, SBT was introduced by some although the proportion of companies doing so was small. It is considered that within 2 years it will be applied by the majority and the importance of SBT will be appropriately recognized.

In addition, as value chain awareness increases, engagement with suppliers and customers is becoming common. Companies setting objectives for Scope 3 emissions and introducing renewable energy resources also achieved a respectable percentage.

Figure 9. Which partners to engage with to reduce emissions in the value chain



Although the number of the companies with third party verification or assurance in Japan has increased, the level is rather low compared with the global level.

Supply chains' efforts to address climate change are regarded as the issue that is not to be evaded, and companies' efforts are supposed to be strengthened.

Third party verification of emissions data

Scope 1 and Scope 2

As shown in Figure 10, the number of companies which undertook the third party verification or assurance was 150 (147 in 2015), which was 61% (60% in 2015) of the companies that responded to the questions. The relevant percentages around the world were 70% in Europe, 71% in Asia and 63% in North America. Although the number of the companies with third party verification or assurance in Japan has increased, the level is rather low compared with the global level. The percentage of the companies which undertook the third party verification or assurance for 70% or more of the gross emissions was 73% of the companies with third party verification or assurance. It is clear from Figure 11 that most verified companies have set a wider verification scope. However, this percentage is also lower than those in other areas (91% in Europe, 79% in Asia, and 94% in North America). In Japan, many companies have only been verified in the scope of Tokyo Metropolitan and Saitama Prefecture scheme. It can be assumed that emissions in the scheme are inclined to become smaller as compared with the companies' gross emissions since this scheme only requires verification of the related buildings. Therefore, the percentage of voluntary verifications in Japan is smaller than those in other parts of the world.

The evaluation criteria for 2016 have set differences in evaluations for the companies with third party verifications or assurance for 70% or more of the gross emissions on a continuous basis from the previous year. In view of the fact that the percentage of the companies with third party verification or assurance for 70% or more of the gross emissions in 2014, when the 70% basis was not adopted, was 53%, it could be easily understood that companies were conscious of evaluation in CDP. In the evaluation criteria for 2016, the weight of questions

concerning third party verification or assurance occupies approximately 18% of the management score and approximately 9% of the leadership score. In addition, the criteria for being selected to A List includes the condition that the perfect score should be obtained (70% or more of the gross emissions should have been verified) in the verification of Scope 1 and Scope 2 emissions, and it can be said that the evaluation criteria reflects the message that CDP and the signatory investment institute to CDP attach importance to third party verification or assurance.

As shown in Figure 12, the adopted verification standard was 35% for ISO14064-3, the largest, 28% for ISAE3000, 15% for Tokyo Metropolitan and Saitama emissions trading scheme, and 11% for ISAE3410. Approximately 85% of the companies with third party verification or assurance for 70% or more of the gross emissions were verified based on ISO14064-3, ISAE3000 and ISAE3410.

Scope3

The number of the companies with third party verification or assurance in Scope 3 was 98 (as compared with 87 in 2015). This number has gradually increased from 2013 when the Scope 3 calculation guidance for GHG Protocol was prepared, and, in 2016, 40% (24% in 2013, 29% in 2014 and 36% in 2015) of the responding companies undertook the third party verification or assurance for Scope 3. As for the calculation conditions for Scope 3, 101 companies (51 companies in 2014, 66 companies in 2015) selected "Relevant, Calculated," "Not relevant, Calculated," or "Not relevant, explanation provided" in all 15 categories, and the number of companies considered to have evaluated all 15 categories to some extent still appears to be increasing. Supply chains' efforts to address climate change are regarded as the issue that is not to be evaded, and companies' efforts are supposed to be strengthened.

Figure 10. Number of verified companies

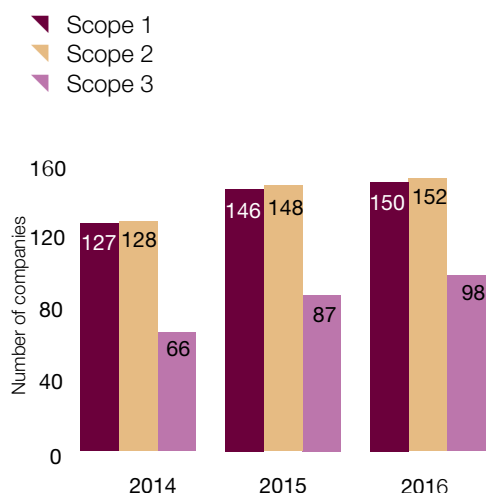


Figure 11. Percentage of companies verified to over 70% among total number verified companies

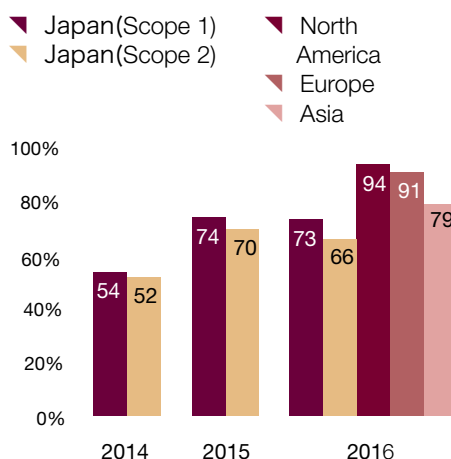
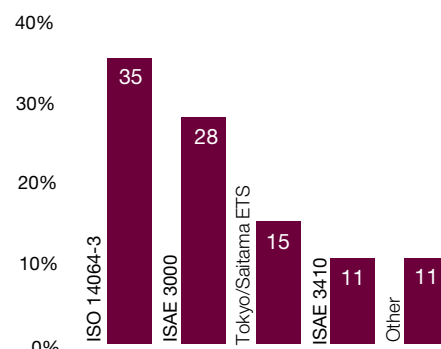


Figure 12. Proportion of verification standard



Appendix 1

CDP 2016 Climate Change Japan 500

Company ^a	2016 score ^b	2015 Response status ^c	Boundary ^d	Scope 1 emissions	Scope 2 emissions ^e	Number of Scope 3 categories reported ^f	Verification/assurance status ^g	Emissions compared to previous year by emissions reduction	SBT setting ^h	Carbon pricing ⁱ
Consumer Discretionary										
ABC-Mart, Inc.	F	NR								
Aisin Seiki Co., Ltd.	B-	AQ				Non-public				
Aoyama Trading Co., Ltd.	F	NR								
Asics Corporation	B	AQ	Financial	5,627	L: 20,464 M: 19,202	13	VAA S1+, S2+, VAF S3	-1.2%	Yes	2 years
Autobacs Seven Co., Ltd.	F	NR								
BANDAI NAMCO Holdings Inc.	C	AQ	Financial	0	L: 61,731	0	VAR S2		Don't know	No
Benesse Holdings, Inc.	A-	AQ	Operational	8,779—	L: 965— M: 10,187—	15	VAF S1, S2, S3	-6.9%	2 years	Yes
Bic Camera Inc	F	NR								
BorgWarner Morse Systems Japan K.K. *	Not scored	AQ	Operational	1,596	L: 13,024	0		-10%	Yes	No
Bridgestone Corporation	A-	AQ				Non-public				
Calsonic Kansei Corporation	A-	AQ	Operational	34,753—	L: 172,790—	13	VAA S1-, S2-	-5.07%	Yes	No
Canon Marketing Japan Inc.	SA	SA								
Casio Computer Co., Ltd.	C	AQ	Financial	4,821	L: 35,205	15	VAA S1+, S2+, S3		2 years	No
CyberAgent, Inc.	Not scored	NR				0				No
Daiichikosho Co.,Ltd.	F	-								
Daihatsu Motor Co., Ltd.	B	NR	Operational	289,252	L: 333,295	15		-1.7%	No	No
Denso Corporation	B	AQ				Non-public				
Dentsu Inc.	A-	AQ	Operational	4,482	L: 53,836	14	VAA S1+, S2+, S3	-7.8%	2 years	2 years
Don Quijote Holdings Co., Ltd.	F	NR								
EXEDY Corporation	C	AQ				Non-public				
Fast Retailing Co., Ltd.	B	NR	Financial	11,767—	L: 122,130—	9		-0.2%	Don't know	No
Fuji Heavy Industries Ltd.	A-	NR	Financial	334,206	M: 323,680	15	VAA S1-, S2-	-0.61%	Don't know	No
FUJII MEDIA HOLDINGS, INC.	F	AQ								
Fuji Xerox Co., Ltd. *	B	AQ	Financial	49,015	L: 161,830	12	VAA S1+, S2+, S3	±0%	No	No
FUTABA INDUSTRIAL CO.LTD *	Not scored	-	Financial	21,726—	L: 39,200—	0		-7%	Yes	No
H2O Retailing Corporation	F	NR								
Hakuhodo DY Holdings Incorporated	F	NR								
Haseko Corporation	F	NR								
Heiwa Corporation	F	NR								
Hikari Tsushin, Inc.	F	NR								
H.I.S.Co.,Ltd.	F	NR								
Honda Motor Company	A-	AQ	Other	1,330,000	L: 3,660,000 M: 3,810,000	12	VAA S1+, S2+, S3	-3.4%	2 years	2 years
Iida Group Holdings	F	NR								
Isetan Mitsukoshi Holdings Ltd.	F	NR								
Isuzu Motors Limited	B	AQ	Financial	124,931	L: 97,248	15		-0.1%	No/Don't know	No
Izumi Co., Ltd.	F	NR								
J. Front Retailing Co., Ltd.	D-	AQ				Non-public				
Koito Manufacturing Co., Ltd.	C	AQ				Non-public				
Komeri Co., Ltd.	F	NR								
K's Holdings Corporation	F	NR								
Laox	F	-								
Marui Group Co., Ltd.	A-	NR	Operational	16,187	M: 92,953	15	VAA S1-, S2-	-3.61%	No	2 years
Mazda Motor Corporation	A-	AQ	Equity	131,700	L: 643,600 M: 0	15	VAA S1-, S2-	-1%	2 years	Yes
Mitsubishi Motors Corporation	F	NR								

Company ^a	2016 score ^b	2015 Response status ^c	Boundary ^d	Scope 1 emissions	Scope 2 emissions ^e	Number of Scope 3 categories reported ^f	Verification/assurance status ^g	Emissions compared to previous year by enussub reduction	SBT setting ^h	Carbon pricing ⁱ
NGK Spark Plug Co., Ltd.	C	AQ	Financial	62,638	L: 222,464	12		-0.6%	Don't know	Yes
NHK Spring Co., Ltd.	F	DP								
Nikon Corporation	A-	AQ	Financial	24,210	L: 191,865 M: 0	15	VAA S1+, S2+	-0.29%	2 years	2 years
Nitori Holdings Co., Ltd.	F	NR								
Nippon Television Network Corporation	F	NR								
Nissan Motor Co., Ltd.	A	AQ	Financial	928,236	L: 3,111,678 M: 2,547,951	15	VAA S1+, S2+, S3	-5.6%	Yes	Yes
Nissan Shatai Co., Ltd.	F	NR								
NOK Corporation	C	DP				Non-public				
Oriental Land Co Ltd.	F	NR								
Onward Holdings Co., Ltd.	F	NR								
PanaHome Corporation	SA	SA								
Panasonic Corporation	A-	AQ	Financial	428,750	L: 1,991,076	15	VAA S1+, S2+, S3	-2%	2 years	2 years
Pioneer Corporation *	B	AQ	Financial	8,265	L: 81,441	15	VAA S1-, S2-	-1.4%	2 years	No
Rakuten, Inc.	F	NR								
Resorttrust Inc	F	NR								
Rinnai Corporation	C	AQ	Financial	35,612	L: 36,006	14		-7.78%	No	No
Ryohin Keikaku Co., Ltd.	F	NR								
Sankyo Co., Ltd.	F	NR								
Sankyu Inc.	F	-								
Sanrio Company, Ltd.	F	NR								
Sega Sammy Holdings Inc.	D	AQ	Other	10,658	L: 100,449 M: 0	0			No	No
Sekisui Chemical Co., Ltd.	B	AQ	Financial	165,922	L: 656,435	15	VAA S1+, S2-, S3	-2.26%	2 years	No
Sekisui House, Ltd.	B	AQ	Financial	85,889—	L: 44,594—	12	VAA S1-, S2-, S3	-1.5%	2 years	No
Seria Co Ltd	F	NR								
Sharp Corporation	B	AQ				Non-public				
Shimachu Co., Ltd.	F	NR								
Shimamura Co., Ltd.	F	NR								
Shimano, Inc.	F	NR								
Shochiku Co., Ltd.	F	NR								
Skylark Co., Ltd.	F	NR								
SKY Perfect JSAT Holdings Inc.	F	NR								
Sony Corporation	A	AQ	Financial	324,130	L: 0 M: 1,044,367	15	VAA S1+, S2+, S3	-2.07%	Yes	No
Stanley Electric Co., Ltd.	Not scored	AQ				Non-public				
Start Today Co., Ltd.	F	NR								
Sumitomo Electric Industries, Ltd.	C	AQ	Other	183,700	L: 1,272,000	8	VAA S1+, S2+, S3	-12%	Yes	No
Sumitomo Forestry Co., Ltd.	A	AQ	Financial	47,635	L: 147,738	15	VAA S1+, S2+, S3	-0.69%	2 years	No
Sumitomo Rubber Industries, Ltd.	B	AQ	Operational	373,513	L: 0 M: 633,455	10	VAA S1+, S2+	-5.55%	No	No
Suzuki Motor Corporation	B	AQ				Non-public				
Takashimaya Company, Limited	F	NR								
Tokai Rika Co., Ltd.	F									
Tokyo Broadcasting System Holdings, Inc.	F	NR								
Toyo Tire & Rubber Co Ltd	C	AQ				Non-public				
Toyoda Gosei	B	AQ	Financial	129,839—	L: 293,183—	15	VAA S1-, S2-	-3.9%	No	No
Toyota Boshoku Corporation	B	AQ				Non-public				
Toyota Industries Corporation	B	AQ	Financial	220,123	L: 594,023	15		-5%	Don't know	No
Toyota Motor Corporation	A	AQ	Operational	2,727,000	L: 5,067,000	15	VAA S1+, S2+, S3	-0.94%	2 years	Yes

Company ^a	2016 score ^b	2015 Response status ^c	Boundary ^d	Scope 1 emissions	Scope 2 emissions ^e	Number of Scope 3 categories reported ^f	Verification/assurance status ^g	Emissions compared to previous year by emissions reduction	SBT setting ^h	Carbon pricing ⁱ
TS Tech Co.,Ltd.	C	AQ	Other	263	L: 11,011 M: 9,557	1		-2.5%	No	No
TV Asahi Corporation	F	NR								
Unipres Corporation *	Not scored	AQ				Non-public				
Universal Entertainment Corporation	F	-								
USS Co., Ltd.	F	NR								
Wacoal Holdings Corp.	F	NR								
Yamada Denki Co., Ltd.	F	NR								
Yamaha Corporation	C	AQ	Financial	27,831	L: 127,986	11		-12.8%	Don't know	No
Yamaha Motor Co., Ltd.	B	AQ				Non-public				
Yokohama Rubber Company, Limited	A	AQ	Financial	325,661	L: 357,584 M: 83—	15	VAA S1+, S2+, S3	-1.95%	2 years	No
Consumer Staples										
Aeon Co., Ltd.	A-	AQ	Financial	239,568	L: 2,911,815	12	VAA S1+, S2+ VAR S3	+6.71%	2 years	No
Ain Holdings Inc	F	-								
Ajinomoto Co.Inc.	B	AQ	Operational	1,296,732	L: 937,524	15		-7%	2 years	No
Asahi Group Holdings, Ltd.	A	AQ	Operational	360,934	L: 259,772	15	VAA S1+, S2+ VAR S3	-2%	2 years	No
Calbee, Inc.	F	NR								
Coca-Cola East Japan Co., Ltd.	F	NR								
Coca-Cola West Co., Ltd.	B	AQ	Operational	106,621	M: 73,790	15		-5.17%	No	No
COSMOS Pharmaceutical Corporation	F	NR								
Ezaki Glico Co., Ltd.	D	NR				0				No
FamilyMart Co., Ltd.	F	NR								
Fuji Oil Co., Ltd. *	D	-	Financial	512,928		1		-0.24%	2 years	No
HOUSE FOODS GROUP INC.	F	NR								
Ito En, Ltd.	F	NR								
Japan Tobacco Inc.	A	AQ	Operational	339,783	M: 378,924	15	VAA S1+, S2+, S3	-2%	No	No
Kagome Co., Ltd.	F	NR								
KAO Corporation	A-	AQ	Operational	666,000	M: 405,000	13	VAA S1+, S2+, S3	-1.86%	Don't know	Yes
Kewpie Corporation	F	NR								
Kikkoman Corporation	A-	AQ	Financial	88,734—	L: 56,181—	10	VAA S1-, S2-	-0.24%	2 years	No
Kirin Holdings Co Ltd	A	AQ	Operational	497,383	M: 636,127	15	VAA S1+, S2+, S3	-0.6%	2 years	No
Kobayashi Pharmaceutical Co., Ltd.	F	NR								
KOSE Corporation	F	NR								
LAWSON, Inc.	A-	AQ	Operational	6,000	M: 19,500	8	VAA S1+, S2+, S3	-5.9%	2 years	Yes
Lion Corporation	B	AQ	Financial	60,367	M: 108,797	13	VAA S1-, S2-	-6.7%	Yes	No
Matsumotokiyo Holdings Co., Ltd.	F	NR								
MEGMILK SNOW BRAND Co.,Ltd. *	D-	-	Financial	267,000—		0				Yes
Meiji Holdings Co Ltd	F	NR								
Mitsubishi Shokuhin Co., Ltd.	SA	-								
NH Foods Ltd.	C	AQ	Financial	277,135—	L: 331,501—	15	VAA S1-, S2- VAF S3	-3%		2 years
Nichirei Corporation	A-	AQ				Non-public				
Nippon Suisan Kaisha Ltd *	D-	-				Non-public				
Nisshin Seifun Group Inc.	F	NR								
Nissin Foods Holdings Co., Ltd.	F	NR								
Pigeon Corp	F	NR								
Pola Orbis Holdings Inc.	F	NR								
Sapporo Holdings Limited	B	AQ	Financial	100,944	L: 140,429	1	VAA S1-, S2-	-0.25%	Yes	No
Seven & I Holdings Co., Ltd.	A-	AQ	Other	116,976	M: 3,609,634—	15	VAA S1+, S2-	-4%	No	No
Shiseido Co., Ltd.	A-	AQ	Financial	28,613	L: 60,010	14	VAA S1-, S2-	-0.3%	2 years	2 years
Sugi Holdings Co., Ltd.	F	NR								

Company ^a	2016 score ^b	2015 Response status ^c	Boundary ^d	Scope 1 emissions	Scope 2 emissions ^e	Number of Scope 3 categories reported ^f	Verification/ assurance status ^g	Emissions compared to previous year by emissions reduction	SBT setting ^h	Carbon pricing ⁱ
Sundrug Co., Ltd.	F	NR								
Suntory Beverage & Food	A-	AQ	Financial	135,070	L: 131,795	15	VAA S1+, S2+, S3	-3%	Yes	No
Takara Holdings Inc.	F	NR								
The Nisshin Oillio Group, Ltd. *	C	-				Non-public				
Toho Co., Ltd.	F	NR								
Toyo Suisan Kaisha, Ltd.	F	NR								
Tsuruha Holdings Inc.	F	NR								
Uni-Charm Corporation	A-	AQ	Operational	30,706	L: 375,139	9	VAA S1+, S2+	-2%	2 years	No
UNY Group Holdings Co., Ltd.	F	NR								
Welcia Holdings Co Ltd	F	-								
Yakult Honsha Co Ltd.	F	NR								
Yamazaki Baking Co., Ltd.	F	NR								
Yaoko Co Ltd	F	-								
Energy										
Cosmo Energy Holdings Co., Ltd.	B	AQ	Operational	3,910,000	M: 300,000	15	VAR S1, S2, S3	-1.4%	Don't know	No
Idemitsu Kosan Co., Ltd.	F	NR								
Inpex Corporation	A-	AQ	Operational	733,100	L: 58,214	15	VAA S1-, S2+, S3	±0%	No	2 years
Japan Petroleum Exploration Co., Ltd.	F	NR								
JX Holdings, Inc	C	AQ	Operational	17,736,337	M: 803,946	15	VAA S1-, S2-		Don't know	Yes
Showa Shell Sekiyu K. K.	D	AQ				Non-public				
Tonen General Sekiyu K.K.	F	SA								
Financials										
Acom Co., Ltd.	F	NR								
Aeon Financial Service	SA	SA								
Aeon Mall Co., Ltd.	SA	SA								
AIFUL Corporation	F	NR								
Aozora Bank, Ltd.	F	NR								
Aplus Financial Co., Ltd.	F	NR								
Credit Saison Co., Ltd.	F	NR								
Century Tokyo Leasing Corporation	C	NR				Non-public				
Daikyo Incorporated	F	NR								
Daito Trust Construction Co., Ltd.	A	AQ	Financial	38,097	L: 34,409 M: 32,819	15	VAA S1+, S2+, S3	-3.51%	2 years	Yes
Daiwa House Industry Co., Ltd.	A-	AQ	Operational	214,926	L: 183,210 M: 0	15	VAA S1+, S2+, S3	-14.4%	2 years	2 years
Daiwa Securities Group Inc.	B	AQ	Financial	961	M: 36,034	13	VAA S1+, S2-, S3	-7.3%	2 years	No
Fukuoka Financial Group, Inc.	D	AQ				Non-public				
Fuyo General Lease Co Ltd	D	-	Financial	118	L: 787 M: 787	0		-5.96%	Don't know	No
Hitachi Capital Corporation	SA	SA								
Hokuhoku Financial Group, Inc.	F	NR								
Hulic Co., Ltd.	F	NR								
Jafco Co., Ltd.	F	NR								
Japan Exchange Group	F	NR								
Japan Post Bank	F	-								
Japan Post Holdings	F	-								
Japan Post Insurance	F	-								
Japan Retail Fund Investment *	C	NR				Non-public				
Kyushu Financial Group	F	-								
Leopalace21 Corporation	F	NR								
Matsui Securities Co., Ltd	D-	NR				0				No
Mitsui Fudosan Co., Ltd.	B	AQ				Non-public				
Mitsubishi Estate Co., Ltd.	B	AQ				Non-public				
Mitsubishi UFJ Financial Group, Inc.	C	AQ	Financial	15,421	L: 256,028	1				No

Company ^a	2016 score ^b	2015 Response status ^c	Boundary ^d	Scope 1 emissions	Scope 2 emissions ^e	Number of Scope 3 categories reported ^f	Verification/assurance status ^g	Emissions compared to previous year by enussub reduction	SBT setting ^h	Carbon pricing ⁱ
Mitsubishi UFJ Lease & Finance Co., Ltd.	F	NR								
Mizuho Financial Group, Inc.	B	AQ	Operational	15,604	L: 221,503	15	VAA S1+, S2+	-0.69%	2 years	Yes
Mori Building Co., Ltd. *	B	AQ	Operational	9,081—	L: 123,987—	15	VAA S1-, S2-	-4.12%	2 years	Yes
MS&AD Insurance Group Holdings, Inc.	B	AQ	Financial	25,010	L: 94,940	14	VAA S1, S2 VAR S3	-2.92%	2 years	No
Nomura Holdings, Inc.	A-	AQ	Operational	2,979	L: 85,754 M: 70,203	15	VAA S1+, S2+, S3	-3%	2 years	Yes
Nomura Real Estate Holdings, Inc.	F	NR								
North Pacific Bank, Ltd.	F	NR								
NTT Urban Development Corporation	B	AQ	Operational	7,274	L: 93,588	14	VAA S1-, S2-	-0.8%	No	No
Okasan Securities Group Inc.	F	NR								
Orient Corporation	F	NR								
ORIX Corporation	C	AQ	Financial	236,954—	L: 0— M: 181,225—	5	VAA S1-, S2-			2 years
Relo Holdings Inc	F	-								
Resona Holdings, Inc.	F	AQ								
Ricoh Leasing Co., Ltd. *	B	AQ	Operational	489	619	15	VAA S1+, S2+, S3	-5.86%	Yes	No
SBI Holdings, Inc.	D	AQ	Other		M: 876—	0				No
Senshu Ikeda Holdings, Inc.	F	NR								
Seven Bank, Ltd.	D	AQ	Operational	0	L: 705	3		-5%	Yes	2 years
Shiga Bank, Ltd.	D	AQ					Non-public			
Shinsei Bank Ltd	F	NR								
Sompo Holdings, Inc.	A	AQ	Financial	18,558	L: 2,226 M: 68,856	15	VAA S1+, S2+, S3	-5%	2 years	Yes
Sony Financial Holdings Inc.	SA	SA								
Sumitomo Mitsui Financial Group	B	AQ					Non-public			
Sumitomo Mitsui Trust Holdings, Inc.	B	AQ	Financial	5,002	M: 38,814—	5	VAA S1+, S2-	-1.1%	Don't know	Yes
Sumitomo Real Estate Sales Co., Ltd.	F	NR								
Sumitomo Realty & Development Co., Ltd.	F	NR								
The 77 Bank, Ltd.	F	NR								
The Awa Bank, Ltd.	F	NR								
The Bank of Kyoto, Ltd.	F	NR								
The Bank of Yokohama, Ltd.	D	AQ	Operational	759	M: 23,020	0		-3.04%		No
The Chiba Bank, Ltd.	F	NR								
The Chugoku Bank, Ltd.	F	NR								
The Dai-ichi Life Insurance Company, Limited	A	AQ	Operational	14,550	L: 154,177	8	VAA S1+, S2+	-2.41%	No	No
The Daishi Bank, Ltd.	F	NR								
The Gunma Bank, Ltd.	F	NR								
The Hachijuni Bank, Ltd.	B	AQ	Other	2,589	L: 10,756	15	VAA S1+, S2+, S3	-0.37%	2 years	No
The Hiroshima Bank, Ltd.	F	NR								
The Hokkoku Bank, Ltd.	F	NR								
The Hyakugo Bank, Ltd.	F	NR								
The Hyakujushi Bank, Ltd.	F	NR								
The Iyo Bank, Ltd.	F	NR								
The Joyo Bank, Ltd.	F	NR								
The Juroku Bank, Ltd.	F	NR								
The Keiyo Bank, Ltd.	F	NR								
The Musashino Bank, Ltd.	F	NR								
The Nishi-Nippon City Bank, Ltd.	F	NR								
The San-in Godo Bank, Ltd.	F	NR								
The Shizuoka Bank, Ltd.	F	NR								
The Suruga Bank, Ltd.	F	NR								
T&D Holdings, Inc.	C	AQ	Financial	2,358—	M: 55,677—	2	VAA S1-, S2-, S3	-3.13%	No	No

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Tokai Tokyo Financial Holdings, Inc.	F	NR								
Tokio Marine Holdings, Inc.	B	AQ	Financial	14,954	L: 77,854	15	VAA S1+, S2+, S3	-2.8%	Yes	2 years
Tokyo Tatemono Co., Ltd.	F	NR								
Tokyu Fudosan Holdings Corporation	C	AQ				Non-public				
Yamaguchi Financial Group, Inc.	F	NR								
Zenkoku Hoshu Co Ltd	F	NR								
Health Care										
Alfresa Holdings Corporation	F	NR								
Asahi Intecc Co Ltd	F	NR								
Astellas Pharma Inc.	A-	AQ	Financial	98,500	L: 0 M: 127,797	15	VAA S1+, S2+, S3	-2.61%	2 years	Yes
Chugai Pharmaceutical Co., Ltd.	C	AQ	Operational	45,698	M: 54,646	9	VAA S1-, S2-	-0.41%	No	No
Daiichi Sankyo Co., Ltd.	A-	AQ	Operational	119,112	M: 126,887	15	VAA S1+, S2+, S3	-0.69%	Yes	2 years
Eisai Co., Ltd.	A-	AQ	Financial	34,931 –	L: 93,747 –	15	VAA S1-, S2-	-2.46%	Yes	No
Hisamitsu Pharmaceutical Co., Inc.	F	NR								
Kaken Pharmaceutical Co., Ltd.	F	NR								
Kissei Pharmaceutical Co., Ltd.	F	NR								
KYORIN Holdings, Inc.	F	NR								
Kyowa Hakko Kirin Co., Ltd.	SA	SA								
M3, Inc.	F	NR								
MEDIPAL Holdings CORPORATION	F	NR								
Miraca Holdings Inc.	F	NR								
Mitsubishi Tanabe Pharma Corporation	SA	SA								
Mochida Pharmaceutical Co., Ltd.	F	NR								
Nihon Kohden Corporation	D	AQ	Financial	282	L: 4,854	10		-3%	Yes	No
Nippon Shinyaku Co., Ltd.	F	NR								
Nipro Corporation	F	NR								
Olympus Corporation	A-	AQ	Operational	13,563	M: 97,072	15	VAA S1+, S2+ VAF S3	-2.1%	No	No
Ono Pharmaceutical Co., Ltd.	B	AQ	Financial	8,547	L: 14,887	9	VAA S1+, S2+	±0%	Yes	No
Otsuka Holdings Co., Ltd.	D	NR				Non-public				
Rohto Pharmaceutical Co., Ltd.	F	NR								
Santen Pharmaceutical Co., Ltd.	C	NR	Financial	13,937 –	L: 17,903 –	0		-8.1%	Yes	No
Sawai Pharmaceutical Co., Ltd.	C	AQ	Equity	12,485 –	M: 43,398 –	0		-0.02%	Yes	No
Shionogi & Co., Ltd.	F	NR								
Sumitomo Dainippon Pharma Co., Ltd.	C	AQ	Operational	26,293	L: 47,714	11		-0.4%	No	No
Suzuken Co., Ltd.	F	NR								
Sysmex Corporation	C	AQ	Financial	3,757	L: 20,278	4		±0%	Don't know	No
Taisho Pharmaceutical Co., Ltd.	F	NR								
Takeda Pharmaceutical Company Limited	A-	AQ	Financial	163,676	M: 253,816	15	VAA S1+, S2+	-2.2%	2 years	No
Terumo Corporation	C	AQ	Other	57,324 –	L: 202,172 –	0			No	No
Toho Holdings Co., Ltd.	F	-								
Tsumura & Co.	B	AQ	Financial	32,123	M: 46,573	2	VAR S1, S2, S3	-1.6%	Don't know	No
Industrials										
Aeon Delight Co., Ltd.	D-	-				0			No	No
Amada Co., Ltd.	F	NR								
ANA Holdings Inc.	B	NR				Non-public				
Asahi Glass Co., Ltd.	C	AQ	Operational	4,930,000	L: 4,430,000	14	VAR S1, S2	-2%	Yes	No
Central Japan Railway Company	C	AQ				Non-public				
Chiyoda Corporation	F	NR								
Comsys Holdings Corporation	F	NR								
Daikin Industries, Ltd.	B	AQ	Financial	743,357 –	M: 536,797 –	13	VAA S1-, S2-, S3	-13%	2 years	No

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Dai Nippon Printing Co., Ltd.	A-	AQ	Financial	263,200	L: 726,100 M: 911,100	14	VAA S1+, S2+, S3	-4.65%	2 years	Yes
DMG Mori Seiki Co., Ltd.	F	NR								
East Japan Railway Company	A-	AQ	Operational	1,080,000	L: 0 M: 1,500,000	13	VAA S1+, S2+	-3.6%	No	Yes
Ebara Corporation	C	AQ				Non-public				
Fanuc Corporation	D	AQ	Other	6,626	M: 80,048	6			Don't know	No
Fuji Electric Co., Ltd.	A-	AQ	Financial	106,906	L: 216,122 M: 215,587	15	VAA S1-, S2-	-3.66%	No	No
Fujikura Ltd.	C	AQ	Financial	25,213—	M: 134,332	15	VAA S1-, S2-, S3	-0.46%	No	No
Fukuyama Transporting Co., Ltd.	F	NR								
Furukawa Electric Co., Ltd.	B	AQ	Operational	150,248	L: 398,901 M: 258,413	10	VAA S1+, S2+	±0%	2 years	2 years
Glory Ltd.	B	AQ	Other	1,057	M: 15,260	15		-1.84%	Don't know	No
GS Yuasa Corporation	C	AQ	Financial	22,331	L: 135,253	5		-2.5%	No	No
Hankyu Hanshin Holdings, Inc.	F	NR								
Hino Motors, Ltd.	B	NR	Operational	157,010	L: 224,500 M: 0	15		-1.65%	No	No
Hitachi Construction Machinery Co., Ltd.	A-	AQ	Operational	41,158	L: 0 M: 108,377	15	VAA S1+, S2+, S3	-1.41%	2 years	No
Hitachi Transport System, Ltd.	SA	NR								
Hoshizaki Electric Co., Ltd.	F	NR								
IHI Corporation	A-	AQ	Operational	80,792	M: 248,215	15	VAA S1-, S2-	-1.2%	No	Yes
ITOCHU Corporation	B	AQ				Non-public				
Japan Airlines Corporation	F	NR								
Japan Airport Terminal Co., Ltd.	F	NR								
JGC Corporation	F	NR								
JTEKT Corporation	B	AQ	Financial	113,639	L: 653,660 M: 0	13	VAA S1-, S2-	-1.19%	No	No
Kajima Corporation	A	AQ	Financial	203,723	L: 74,384 M: 73,236	15	VAA S1+, S2+ VAR S3	-2.72%	2 years	2 years
Kamigumi Co., Ltd.	F	NR								
Kanden Co Ltd	F	NR								
Kawasaki Heavy Industries, Ltd.	B	AQ	Financial	175,719	L: 98,187 M: 225,784	15	VAA S1+, S2+, S3	-2.9%	2 years	No
Kawasaki Kisen Kaisha, Ltd.	A	AQ	Financial	13,267,268	L: 30,561	15	VAA S1+, S2+, S3	-0.11%	Yes	Yes
Keihan Electric Railway Co., Ltd.	F	NR								
Keikyu Corporation	F	NR								
Keio Corporation	F	DP								
Keisei Electric Railway Co., Ltd.	F	NR								
Kinden Corporation	F	NR								
Kintetsu Group Holdings Co.,Ltd.	B	AQ	Operational	48,339—	L: 623,223 M: 571,557	14		-1%	No	No
Kokuyo Co., Ltd. *	B	AQ	Financial	8,780	L: 36,817 M: 35,123	13	VAA S1+, S2+, S3	-3.44%	No	Yes
Komatsu Ltd.	A	AQ	Operational	90,248	L: 239,509	15	VAA S1+, S2+, S3	-8.6%	2 years	No
Kubota Corporation	A-	AQ	Financial	329,700	L: 356,800 M: 343,100	1	VAA S1+, S2+, S3	-1.25%	No	No
Kurita Water Industries Ltd.	C	AQ	Financial	27,460	L: 175,872 M: 161,425	3		-1.3%	No	No
LIXIL Group Corporation	B	AQ	Operational	293,426	L: 437,105	14	VAA S1+, S2+, S3	-0.09%	2 years	No
Mabuchi Motor Co., Ltd.	F	DP								
Maeda Road Construction Co.,Ltd	F	NR								
Makita Corporation	F	NR								
Marubeni Corporation	B	AQ				Non-public				
Minebea Co., Ltd.	F	NR								
Mitsubishi Corporation	A-	AQ				Non-public				

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Mitsubishi Electric Corporation	A	AQ	Operational	366,000	L: 930,000 M: 930,000	15	VAA S1+, S2+	-4.9%	2 years	No
Mitsubishi Heavy Industries, Ltd.	B	AQ	Operational	185,951	L: 606,087	9	VAA S1+, S2+	-0.2%	No	No
Mitsubishi Logistics Corporation	F	NR								
Mitsui & Co., Ltd.	A-	AQ				Non-public				
Mitsui Engineering & Shipbuilding Co Ltd	D-	AQ				Non-public				
Mitsui O.S.K. Lines Ltd	A-	AQ	Financial	18,675,896	L: 55,595	13	VAA S1+, S2+, S3	-1.61%	No	No
Misumi Group Inc.	F	NR								
Monotaro Co Ltd	F	NR								
Nabtesco Corporation	A	AQ	Financial	7,074	L: 47,729	15	VAA S1+, S2+, S3	-1.1%	2 years	No
Nagase & Co., Ltd.	D	NR	Financial		L: 8,502 M: 0	1		-11.88%	Yes	No
Nagoya Railroad Co., Ltd.	F	NR								
Nankai Electric Railway Co., Ltd.	A-	AQ	Equity	100,646	M: 208,511	15		-2.9%	2 years	No
NGK Insulators, Ltd.	B	AQ				Non-public				
Nidec Corporation	D	NR	Equity	76,430—	L: 544,511—	12			2 years	No
Nihon M&A Center Inc	F	-								
Nippon Express Co., Ltd.	C	AQ				Non-public				
Nippon Sheet Glass Company, Ltd *	B	AQ				Non-public				
Nippon Yusen Kaisha Line	A-	AQ	Operational	21,112,158	L: 27,426 M: 32,635	15	VAA S1+, S2+, S3	-1.17%	2 years	No
Nisshinbo Holdings Inc.	B	AQ	Financial	270,200	L: 220,181 M: 182,565	4		-0.5%	No	No
Nishi-Nippon Railroad Co., Ltd.	F	NR								
Noritz Corporation *	Not scored	AQ				Non-public				
NSK Ltd.	B	AQ	Financial	139,104	L: 880,049	15	VAA S1+, S2-	-0.5%	Don't know	No
NTN Corporation	A-	AQ	Financial	97,263	L: 284,988 M: 224,828	14	VAA S1+, S2+, S3	+0.4%	Yes	No
Obayashi Corporation	A-	AQ	Financial	253,077	L: 80,536	15		-3.5%	Don't know	No
Odakyu Electric Railway Co., Ltd.	F	NR								
Okuma Corporation	F	NR								
OSG Corporation	F	-								
PARK24 Co., Ltd.	F	NR								
Pilot Corp	F	-								
Recruit Holdings Co.,Ltd.	F	NR								
Sanwa Holdings Corporation	F	-								
Secom Co., Ltd.	A	AQ	Operational	35,083	L: 31,470	15	VAA S1+, S2+, S3	-1.67%	2 years	No
Seibu Holdings Inc.	F	NR								
Seino Holdings Co., Ltd.	F	NR								
Shimizu Corporation	B	AQ	Financial	206,011	L: 56,253 M: 8,535	15	VAA S1+, S2+, S3	-13.19%	2 years	2 years
SMC Corporation	F	NR								
Sohgo Security Services Co., Ltd.	D-	NR				Non-public				
Sojitz Corporation	B	AQ				Non-public				
Sotetsu Holdings, Inc.	F	NR								
Sumitomo Heavy Industries. Ltd.	B	AQ	Financial	16.107—	L: 51,651—	6		-0.13%	Yes	2 years
Sumitomo Corporation	A-	AQ				Non-public				
Sun Messe Co., Ltd. *	C	AQ				Non-public				
Tadano Ltd	F	NR								
Taisei Corporation	A	AQ	Operational	224,528	L:100,536	14	VAA S1+, S2+, S3	-2.2%	2 years	Yes
Temp Holdings Co Ltd	D-	NR				0				No
The Japan Steel Works, Ltd.	F	NR								

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THK Co., Ltd.	C	AQ	Financial	23,481 –	L: 164,576 –	0		-1.24%	Don't know	No
Tobu Railway Co., Ltd.	F	NR								
Toda Corporation	A	AQ	Operational	52,336	L: 25,504	15	VAA S1+, S2+, S3	-2.4%	2 years	No
Tokyu Corporation	F	DP								
Toppan Forms Co., Ltd.	SA	NR								
Toppan Printing Co., Ltd.	B	AQ	Financial	258,245	M: 636,351 –	10	VAA S1+, S2-, S3	-16%	Yes	No
Toshiba Corporation	A	AQ	Financial	890,000	L: 2,190,000	15	VAA S1+, S2+, S3	-2%	2 years	No
Toto Ltd.	A-	AQ	Financial	168,442 –	L: 156,638 –	15	VAA S1-, S2-, S3	+2.27%	No	Yes
Toyota Tsusho Corporation	F	NR								
Tsubakimoto Chain Co.	C	-				Non-public				
Ushio Inc.	C	AQ	Financial	3,543	L: 35,089	15		-63.58%	Don't know	No
West Japan Railway Company	D	AQ	Other	89,800	L: 1,914,000	10		+0.8%		No
Yamato Holdings Co., Ltd.	C	AQ				Non-public				
Information Technology										
Advantest Corporation	D-	AQ	Financial	3,649		0		-1%		
Alps Electric Co., Ltd.	C	AQ				Non-public				
Anritsu Corporation *	B	AQ	Financial	1,498	L: 15,031	15	VAA S1+, S2+, S3	-1.36%	No	No
Azbil Corporation	B	AQ	Financial	5,454	L: 15,095	15	VAA S1+, S2+ VAF S3	-5.9%	No	
Brother Industries, Ltd.	B	AQ	Operational	32,587 –	L: 104,426	12	VAA S1-, S2-, S3	-6.21%	2 years	2 years
Canon Inc.	A	AQ	Financial	169,974	M: 1,053,222	15	VAA S1+, S2+, S3	-1.98%	2 years	Yes
Capcom Co., Ltd.	F	NR								
Citizen Holdings Co., Ltd.	C	AQ	Financial	20,098	L: 162,857	15	VAA S1-, S2-	-2%	2 years	Yes
COLOPL Inc	F	NR								
Cookpad Inc	F	-								
DeNA Co., Ltd.	F	NR								
DISCO Corporation	C	AQ	Operational	3,666 –	L: 37,855 –	11	VAA S1-, S2-		Yes	No
FujiFilm Holdings Corporation	A-	AQ	Financial	652,228 –	L: 0 – M: 603,499 –	15	VAA S1-, S2-, S3	-1.34%	2 years	Yes
Fujitsu Ltd.	B	AQ	Financial	191,600	L: 686,400 M: 0	13	VAA S1+, S2+, S3	-2.4%	2 years	2 years
GMO Internet, Inc	F	-								
GREE, Inc.	F	NR								
GungHo Online Entertainment, Inc.	F	NR								
Hamamatsu Photonics K.K.	B	AQ	Financial	14,969 –	L: 0 – M: 40,392 –	14		-2.71%	No	No
Hirose Electric Co., Ltd.	C	NR	Financial	2,143	L: 32,334	9	VAR S1, S2, S3		Yes	Yes
Hitachi High-Technologies Corporation	C	AQ	Financial	5,855	M: 49,243	12		-0.6%	Don't know	No
Hitachi Kokusai Electric Inc	C	NR	Financial	883	L: 19,202	10	VAA S1-, S2-	-1.2%	No	No
Hitachi, Ltd.	B	AQ	Financial	773,517	L: 2,922,136	15	VAA S1+, S2-, S3	-3.1%	2 years	Yes
HORIBA, Ltd.	F	-								
Hoya Corporation	D	AQ				Non-public				
Ibiden Co., Ltd.	C	AQ	Other	127,100	L: 632,900 –	9		-38.4%	Yes	No
Itochu Techno-Solutions Corporation	SA	AQ								
Japan Aviation Electronics Industry, Limited	F	NR								
Japan Display Inc.	B	AQ	Financial	114,246	L: 625,020 M: 0	3		-0.46%	2 years	No
Kakaku.com, Inc.	F	NR								
Keyence Corporation	F	NR								
Konami Corporation	F	NR								
Konica Minolta, Inc.	A	AQ	Financial	167,360	L: 224,298 M: 252,558	15	VAA S1+, S2+, S3	-1.8%	2 years	2 years
Kyocera Corporation	B	AQ				Non-public				

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mixi, inc.	F	NR								
Murata Mfg. Co.	B	AQ	Financial	121,100	L: 936,500 M: 1,011,200	12		-2.6%	2 years	No
NEC Corporation	A-	AQ	Financial	59,039	L: 0 M: 298,720	15	VAA S1+, S2+, S3	-3%	2 years	Yes
NEXON Co., Ltd.	F	NR								
Nintendo Co., Ltd.	F	NR								
Nippon Electric Glass Co., Ltd.	F	NR								
Nissha Printing Co., Ltd. *	C	AQ				Non-public				
Nomura Research Institute, Ltd.	A-	AQ	Financial	1,686	L: 84,473	15	VAA S1+, S2+, S3	-14.49%	Yes	2 years
NS Solutions Corporation	F	NR								
NTT Data Corporation	A-	AQ	Financial	6,073	L: 238,679	15	VAA S1-, S2-	-6.5%	No	No
OBIC Co., Ltd.	F	NR								
OMRON Corporation	B	AQ	Financial	72,485	M: 205,930—	7	VAA S1+, S2-, S3	-2.5%	Yes	No
Oracle Corporation Japan	SA	SA								
Otsuka Corporation	F	NR								
Renesas Electronics Corporation *	C	AQ	Financial	226,000	L: 1,061,000	0	VAR S1, S2	-1%	Yes	No
Ricoh Co., Ltd.	A-	AQ	Operational	178,148	L: 320,267 M: 0	15	VAA S1-, S2+, S3	-1.8%	Yes	2 years
Rohm Co., Ltd.	B	AQ	Equity	42,904	L: 515,535	10	VAR S1, S2, S3	-2.62%	No	Yes
SCREEN Holdings CO., Ltd.	C	AQ	Operational	11,436—	M: 41,087	15		-3%	No	No
SCSK Corporation	C	SA	Other	158	L: 45,454—	13		-3.21%	No	No
Seiko Epson Corporation	B	AQ	Financial	98,537	L: 410,725 M: 467,512	10			2 years	
Shimadzu Corporation	C	AQ				Non-public				
SQUARE ENIX Holdings CO.,Ltd.	F	NR								
Sumco Corporation	D-	NR				Non-public				
Taiyo Yuden Co., Ltd.	C	AQ	Financial	31,797	L: 282,123 M: 174,787	5		-1%	No	No
TDK Corporation	C	AQ	Financial	95,023	L: 1,379,283	9		-2.69%	2 years	2 years
Teac *	Not scored	-	Other			0				No
Tokyo Electron Ltd.	B	AQ	Equity	7,818—	L: 30,349— M: 109,380—	15		-8%	Yes	No
Topcon Corp	F	NR								
Toshiba Tec Corporation	SA	SA								
Trend Micro Incorporated.	F	NR								
Yahoo Japan Corporation	F	AQ								
Yaskawa Electric Corporation	B	AQ	Other	4,015	L: 18,610 M: 18,106	11	VAA S1+, S2+, S3	-1.9%	Don't know	No
Yokogawa Electric Corporation	B	AQ	Financial	12,097	L: 75,908	11	VAF S1, S2	-4%	2 years	No
Materials										
ACHILLES CORPORATION *	D-	AQ				Non-public				
Air Water Inc.	F	NR								
Asahi Kasei Corporation	A-	AQ	Financial	3,358,249	L: 1,137,606	15	VAA S1+, S2- VAF S3	-0.5%	Don't know	No
Daicel Corporation	C	AQ				Non-public				
Daido Steel Co., Ltd.	F	NR								
Denka Company Limited	B	AQ	Operational	1,735,165	L: 482,478	15		-0.62%	No	Yes
DIC Corporation	A-	AQ	Financial	277,359	L: 275,928 M: 110,273	10	VAA S1+, S2+, S3	-1.12%	No	No
Dowa Holdings Co., Ltd.	F	AQ								
FP Corporation	C	AQ	Financial	10,227	L: 171,710	8		-0.61%	Don't know	No
FUJIMORI KOGYO CO.,LTD *	D	AQ				Non-public				
Hitachi Chemical Company, Ltd.	C	AQ	Financial	145,112	L: 547,076	11	VAA S1+, S2-	-1.1%	2 years	Yes
Hitachi Metals, Ltd.	B	AQ				Non-public				

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JFE Holdings, Inc.	B	AQ				Non-public				
JSR Corporation	B-	AQ	Operational	681,074 –	L: 721,082 –	9	VAR S1, S2, S3	±0%	No	Yes
JSP *	C-	NR	Other	17,759	M: 60,064	0		-7.2%		No
Kaneka Corporation	A-	AQ				Non-public				
Kansai Paint Co., Ltd.	F	AQ								
Kobe Steel., Ltd.	C	AQ				Non-public				
Kuraray Co., Ltd.	B-	AQ	Financial	1,173,000	M:1,027,000 –	11		-1%	No	No
Lintec Corporation	F	NR								
Maruichi Steel Tube Ltd.	F	NR								
Mitsubishi Chemical Holdings Corporation	B	AQ	Financial	8,650,000	L: 7,692,000 M: 7,692,000	15	VAA S1+, S2+, S3	-1%	No	No
Mitsubishi Gas Chemical Company, Inc.	A-	AQ				Non-public				
Mitsubishi Materials Corporation	A-	AQ	Financial	10,415,831	L: 0 M: 1,714,204	13	VAA S1+, S2-, S3	-0.22%	2 years	No
Mitsui Chemicals, Inc.	B	AQ	Other	4,217,000	L: 430,000 M: 1,040,000	15		-0.8%	Don't know	Yes
Mitsui Mining & Smelting Co., Ltd.	F	NR								
Nifco Inc.	F	-								
Nippon Kayaku Co., Ltd.	C	AQ	Financial	25,266	L: 0 M: 46,571	15		-6.97%	2 years	No
NIPPON LIGHT METAL CO. LTD. *	C	AQ	Financial	354,509	L:517,871	2	VAF S1, S2	±0%	Don't know	No
Nippon Paint Co., Ltd.	F	NR								
Nippon Paper Industries Co Ltd	D	AQ				Non-public				
Nippon Valqua Industries Ltd *	C	AQ	Financial	2,116	L: 17,096	13		-3.87%	Don't know	No
Nippon Shokubai Co., Ltd.	C	AQ				Non-public				
Nippon Steel & Sumitomo Metal Corporation	B	AQ				Non-public				
Nissan Chemical Industries, Ltd.	D	NR	Equity	351,988	L: 110,203	0			2 years	No
Nisshin Steel Holdings Co., Ltd.	F	NR								
Nitto Denko Corporation	D	AQ	Financial	397,144 –	L: 440,750 –	4		-4%	2 years	2 years
Oji Holdings Corporation	B	AQ				Non-public				
Rengo Co., Ltd.	C	AQ	Financial	904,189	L: 268,033 M: 375,456	12	VAA S1-, S2-	-2%	No	2 years
Shin-Etsu Chemical Co., Ltd.	B	AQ	Equity	1,592,968	L: 4,406,809	15	VAR S1, S2, S3	+0.94%	No	2 years
Showa Denko K.K.	B	AQ				Non-public				
Sumitomo Chemical Co., Ltd.	A-	AQ	Operational	4,612,000	M: 2,320,000	15	VAA S1+, S2+, S3	-14.9%	No	Yes
Sumitomo Osaka Cement Co., Ltd.	F	NR								
Sumitomo Metal Mining Co., Ltd.	A-	AQ	Financial	2,081,085	L: 0 M: 1,139,702	9	VAA S1+, S2+, S3	-0.5%	No	No
Taiheiyo Cement Corporation	B-	AQ				Non-public				
Taiyo Nippon Sanso Corporation	SA	NR								
TANAX, INC. *	C	-	Operational	1,417	M: 2,345	0		-5.8%	No	No
Teijin Ltd.	B	AQ	Financial	848,000	L: 922,000	1	VAA S1+, S2+, S3		2 years	No
Toda Kogyo Corp *	D	NR	Financial	12,856 –	L: 70,804 – M: 70,804 –	0			Yes	No
Toho Zinc Co Ltd *	Not scored	NR				Non-public				
Tokuyama Corporation *	Not scored	AQ				Non-public				
Tomoku Co., Ltd *	Not scored	AQ	Operational	27,434	20,064	0			Don't know	No
Toray Industries, Inc.	A-	AQ	Operational	3,334,821	L: 1,954,828	15	VAA S1-, S2-	+4.8%	Yes	No
Tosoh Corporation	F	NR								
Toyobo Co., Ltd.	B-	AQ	Financial	651,759	L: 248,924	6		-0.5%	Yes	No
Toyo Ink SC Holdings Co., Ltd. *	C	AQ	Financial	51,568 –	L: 40,432 –	4	VAA S1-, S2-	-1%	2 years	Yes

Company ^a	2016 score ^b	2015 Response status ^c	Boundary ^d	Scope 1 emissions	Scope 2 emissions ^e	Number of Scope 3 categories reported ^f	Verification/assurance status ^g	Emissions compared to previous year by emissions reduction	SBT setting ^h	Carbon pricing ⁱ
Toyo Seikan Group Holdings, Ltd.	C	AQ	Financial	539,281	L: 169,812 M: 1,011,924	0		-1.5%	No	No
Ube Industries, Ltd.	B	AQ	Financial	11,660,000—	L: 400,000 M: 410,000—	15		-0.16%	No	Yes
Unitika Ltd. *	Not scored	-				Non-public				
Yamato Kogyo Co., Ltd.	F	NR								
Zeon Corporation	C	NR	Financial	539,442—	L: 64,312—	0		±0%	2 years	No
Telecommunication Services										
KDDI Corporation	B	AQ	Equity	1,081,568—	L: 230,936— M: 1,064,020	13	VAA S1-, S2-, S3	±0%	No	Yes
Nippon Telegraph & Telephone Corporation (NTT)	A-	AQ	Financial	227,809—	L: 4,942,063—	15	VAA S1-, S2-, S3	-11.75%	No	No
NTT DOCOMO, INC.	B	AQ	Other	70,634	M: 1,533,073	15	VAA S1+, S2+, S3	-5%	Yes	Yes
SoftBank Corporation	F	NR								
Utilities										
Chubu Electric Power Co., Inc.	F	DP								
Electric Power Development Co., Ltd (J-POWER)	F	DP								
Hokkaido Electric Power Co., Inc.	F	DP								
Hokuriku Electric Power Company	F	NR								
Kyushu Electric Power Co Inc	F	DP								
Osaka Gas Co., Ltd.	A-	AQ	Financial	3,917,000—	L: 286,000—	13	VAA S1-, S2-, S3	-2.1%	No	Yes
Shikoku Electric Power Co., Inc.	F	NR								
The Chugoku Electric Power Company	F	NR								
The Kansai Electric Power Co., Inc.	F	DP								
Tokyo Electric Power Company Holdings, Inc.	B	DP	Financial	97,221,600	M: 200,000	15	VAA S2-	-1%	Don't know	Yes
Tokyo Gas Co., Ltd.	A-	AQ	Financial	3,077,000	M: 305,000—	15	VAA S1+, S2-, S3	-0.19%	2 years	Yes
Toho Gas Co., Ltd.	A-	AQ				Non-public				
Tohoku Electric Power Co., Inc.	F	NR								

a Companies with * voluntarily responded to CDP.

b Not scored: Companies who responded after the deadline or who are not eligible to be scored.
SA: The parent company responded on behalf of them.

c AQ: Answered Questionnaire
DP: Declined to Participate
NR: Not Responded
SA: See Another
- : Company did not fall into the sample

d Financial: Financial control
Operational: Operational control
Equity: Equity share

e L: Location-based emissions
M: Market-based emissions
-: Relevant emissions are excluded.

f Number of the Scope 3 categories that companies responded as 'Relevant, calculated', 'Not relevant, calculated' or 'Not relevant, explanation provided'

g VAR: Verification/Assurance reported; companies have reported that the have verification complete or underway with last year's statement available but the verification statement provided has not been awarded the full performance points available, or they have not been scored and therefore their verification statement has not been assessed.

VAF: Verification/Assurance reported as underway, first year; companies have reported that the have verification underway but that it is the first year they have undertaken verification. In this case there is no verification statement available for assessment.
VAA: Verification/Assurance approved; companies have reported that they have verification complete or underway with last year's certificate available and they have been awarded the full performance points available for their statement.
S1: Scope 1; verification/assurance applies to Scope 1 emissions.
S2: Scope 2; verification/assurance applies to Scope 2 emissions.
S3: Scope 3; verification/assurance applies to Scope 3 emissions
+: More than 70% of the reported emission is verified.
-: Less than 70% of the reported emission is verified.

h Yes: Company has set SBT
2 years: Company hasn't set SBT but will do so within two years.
No: Company hasn't set SBT and don't plan to do so within two years.
Don't know: Company doesn't know whether their target is SBT or not.

i Yes: Company uses internal price on carbon.
2 years: Company doesn't use internal price on carbon, but will do so within two years.
No: Company doesn't use internal price on carbon, and don't plan to do so within two years.

Appendix 2

2016 Key Trends

The statistics presented in this key trends table may differ from those in other CDP reports for two reasons: (1) the data in this table is based on all responses received by 13 September 2016; (2) it is based on binary data (e.g. Yes/No or other drop down menu selection) reported to CDP and does not incorporate any validation of the follow up information provided or reflect the scoring methodology. The latter, in particular, is likely to lead to an over-reporting of data in this key trends table.

Statistic	Hong Kong & SE Asia	Australia ASX 200	Benelux	Brazil	Canada	Central Eastern Europe	China	DACH (DE, AU, CH)	Emerging Markets
Number of companies in the sample	170	200	150	120	200	100	100	350	800
Number of companies answering CDP ¹	59	86	57	67	97	17	10	155	309
% of sample answering CDP 2016 ¹	35	43	38	56	49	17	10	45	39
% of sample market capitalization answering CDP 2016 ²	46	80	85	90	72	33	20	85	43
% of responders reporting Board or other senior management responsibility for climate change	100	100	96	85	91	50	100	93	97
% of responders with incentives for the management of climate change issues	75	70	86	67	73	37	80	70	80
% of responders reporting climate change as being integrated into their business strategy	96	89	88	78	88	87	100	84	96
% of responders reporting engagement with policymakers on climate issues to encourage mitigation or adaptation	90	79	90	82	90	75	90	80	90
% of responders with emissions reduction targets ³	77	60	81	60	64	37	50	68	80
% of responders reporting absolute emission reduction targets ³	50	36	58	40	37	25	40	41	49
% of responders reporting intensity emission reduction targets ³	56	37	48	38	38	25	30	51	52
% of responders reporting active emissions reduction initiatives in the reporting year	94	85	96	72	88	87	90	90	91
% of responders indicating that their products and services directly enable third parties to avoid GHG emissions	73	60	65	60	57	50	90	64	65
% of responders whose absolute emissions (Scope 1 and 2) have decreased compared to last year due to emission reduction activities	56	67	73	57	68	75	20	69	65
% of responders seeing regulatory risks	85	84	87	78	88	75	90	71	89
% of responders seeing regulatory opportunities	83	78	77	75	79	50	100	80	86
% of responders seeing physical risks	90	80	83	78	82	50	70	65	88
% of responders seeing physical opportunities	69	66	56	65	64	75	50	59	74
% of responders independently verifying any portion of Scope 1 emissions data ⁴	50	52	58	50	41	37	20	52	62
% of responders independently verifying any portion of Scope 2 emissions data ⁴	52	49	52	52	33	25	20	47	60
% of responders independently verifying least 70% of scope 1 emissions data ⁴	42	47	54	48	30	37	20	48	56
% of responders independently verifying least 70% of scope 2 emissions data ⁴	42	42	52	48	28	25	20	41	52
% of responders reporting scope 2 location-based emissions data	90	93	86	78	94	87	50	79	89
% of responders reporting scope 2 market-based emissions data	21	28	61	30	30	0	10	54	31
% of responders reporting emissions data for 2 or more named Scope 3 categories ⁵	38	59	69	75	50	25	30	65	65
% of responders using CDSB framework to report climate change data in mainstream financial report	8	13	25	10	7	12	20	13	18

1 This statistic includes those companies that respond by referencing a parent or holding company's response. However the remaining statistics presented do not include these responses.

2 This refers to the total market capitalization of that sample group of companies. Market cap data sourced from Bloomberg.

3 Companies may report multiple targets. However, in these statistics a company will only be counted once.

4 This takes into account companies reporting that verification is complete or underway, but does not include any evaluation of the verification statement provided.

5 Only companies reporting Scope 3 emissions using the Greenhouse Gas Protocol Scope 3 Standard named categories have been included below. Whilst in some cases "Other upstream" or "Other downstream" are legitimate selections, in most circumstances the data contained in these categories should be allocated to one of the named categories. In addition, only those categories for which emissions figures have been provided have been included.

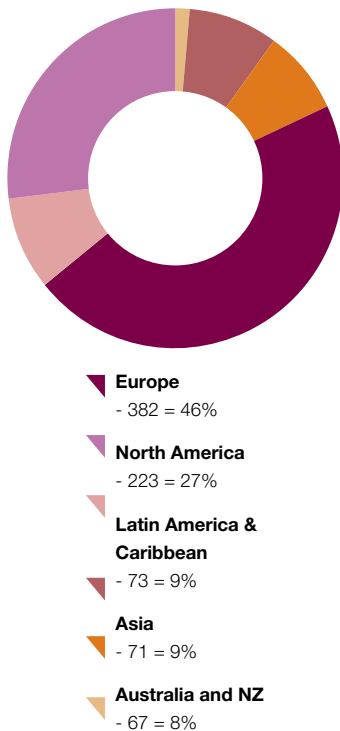
6 Includes responses across all samples as well as responses submitted by companies not included in specific geographic or industry samples in 2016.

Euro 300	France	UK FTSE 350	Iberia (ES, PT)	India	Ireland	Italy	Japan	Korea	Latin America	New Zealand NZX 50	Nordic	Portugal	Russia	US S&P 500	South Africa	Spain	Turkey	Overall Figure ⁶
300	250	350	125	200	30	100	500	200	80	50	260	40	30	500	100	85	100	N/A
262	97	224	53	48	9	45	261	77	41	15	143	10	7	332	77	43	38	2268
88	40	64	42	24	30	45	52	38	51	30	55	25	23	67	78	50	38	N/A
92	83	92	89	46	65	69	72	67	61	79	79	76	39	78	85	91	50	68
99	96	99	98	96	100	93	98	100	97	93	97	100	71	94	100	98	94	95
90	83	80	90	79	89	83	89	88	59	60	73	78	57	82	81	93	82	78
96	93	91	94	96	100	90	96	97	85	93	93	89	100	92	96	95	91	91
94	91	84	96	85	100	88	94	87	79	80	84	89	86	86	92	98	82	86
92	78	80	94	81	78	83	95	90	50	73	80	89	71	80	79	95	76	77
60	40	40	77	23	44	71	68	65	26	33	43	56	43	49	41	81	41	47
69	67	57	65	70	33	52	68	42	35	47	61	67	71	46	51	65	56	52
98	95	93	100	96	89	98	97	90	82	93	89	100	100	97	93	100	85	92
77	73	56	81	57	56	76	81	65	44	47	73	78	57	61	52	81	50	64
87	72	83	92	60	100	76	84	71	44	60	80	89	43	79	74	93	62	86
90	87	95	98	94	89	90	95	99	74	73	89	100	86	81	95	98	85	86
94	91	92	94	89	100	83	93	90	71	73	87	89	71	80	93	95	82	85
89	83	87	89	87	100	81	88	86	88	80	84	89	71	79	96	88	85	82
79	71	75	81	77	89	69	82	78	47	73	82	67	43	65	89	84	71	70
85	80	64	79	53	89	69	37	77	41	47	58	78	0	55	73	79	38	55
83	82	61	71	51	89	62	37	74	41	40	54	78	0	52	70	70	38	52
81	71	59	75	51	89	69	31	67	41	13	56	78	0	51	64	74	35	49
78	71	54	67	45	89	62	29	57	38	20	51	78	0	51	63	65	35	46
92	93	97	79	96	89	88	76	88	85	80	88	56	43	94	97	84	85	88
63	33	47	54	28	56	45	50	30	18	27	58	78	14	48	48	49	23	42
87	70	69	81	68	78	55	82	58	62	73	68	89	0	65	85	79	65	65
23	21	26	23	19	0	7	9	29	6	7	16	22	0	7	33	23	3	14

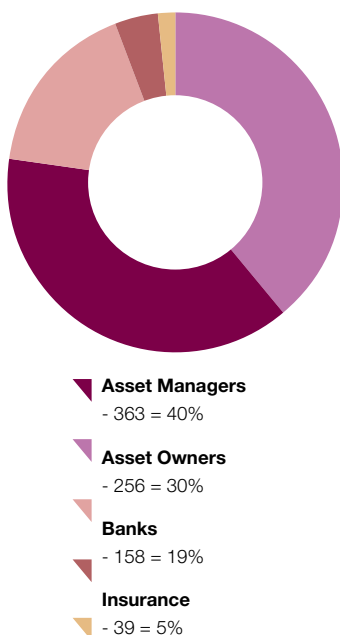
Appendix 3

Investor signatories and members

1. Investor signatories by location



2. Investor signatories by type



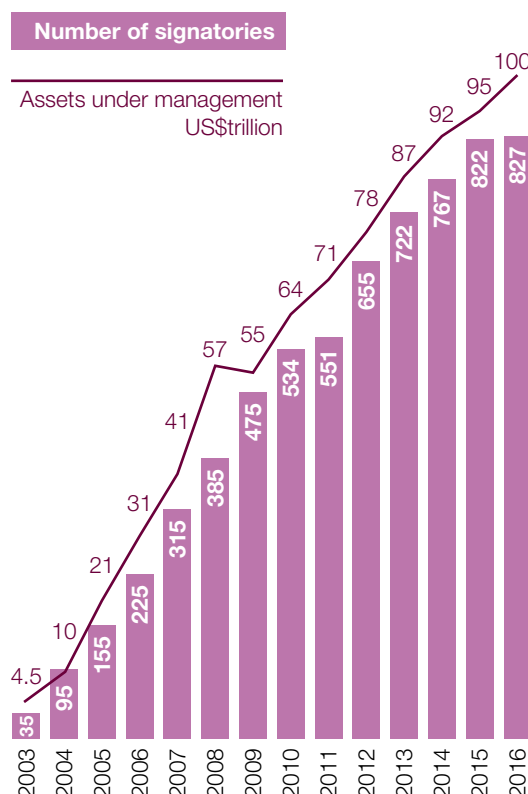
CDP's investor program – backed in 2016 by 827 institutional investor signatories representing in excess of US\$100 trillion in assets – works with investors to understand their data and analysis requirements and offers tools and solutions to help them.

Our global data from companies and cities in response to climate change, water insecurity and deforestation and our award-winning investor research series is driving investor decision-making. Our analysis helps investors understand the risks they run in their portfolios. Our insights shape engagement and add value not only in financial returns but by building a more sustainable future.

For more information about the CDP investor program, including the benefits of becoming a signatory or member please visit: <https://www.cdp.net/Documents/Brochures/investor-initiatives-brochure-2016.pdf>

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

ACTION
AEGON N.V.
Allianz Global Investors
ATP Group
Aviva Investors
AXA Group
Bank of America Merrill Lynch
Bendigo and Adelaide Bank
BlackRock
Boston Common Asset Management, LLC
BP Investment Management Limited
British Columbia Investment Management Corporation
California Public Employees' Retirement System
California State Teachers' Retirement System
Calvert Investment Management, Inc
Capricorn Investment Group
Catholic Super
CCLA Investment Management Ltd
DEXUS Property Group
Etica SGR
Fachef
FAPES
Fundação Itaú Unibanco
Generation Investment Management
Goldman Sachs Asset Management
Henderson Global Investors
Hermes Fund Managers
HSBC Holdings plc
Infraprev
KeyCorp
KLP
Legg Mason, Inc.
London Pensions Fund Authority
Maine Public Employees Retirement System
Morgan Stanley
National Australia Bank
NEI Investments
Neuberger Berman
New York State Common Retirement Fund
Nordea Investment Management
Norges Bank Investment Management
Overlook Investments Limited
PFA Pension
POSTALIS - Instituto de Seguridade Social dos Correios e Telégrafos
PREVI
Rathbone Greenbank Investments
Real Grandeza
Robeco
RobecoSAM AG
Rockefeller & Co.
Royal Bank of Canada
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