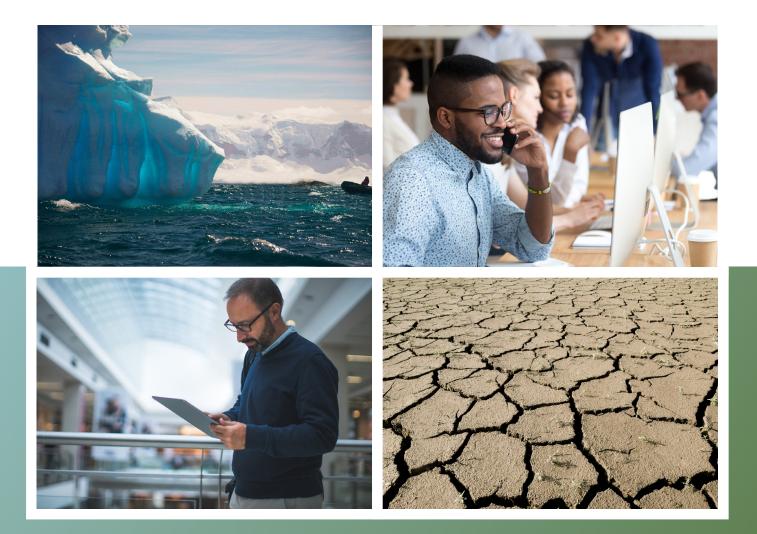




Business and Investor public support for Climate Transition Policy: creating a mandate for action







Consortium partners

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This project has been commissioned by the PRI:













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Published September 2019. Data sources compiled February-May 2019

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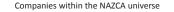
Summary

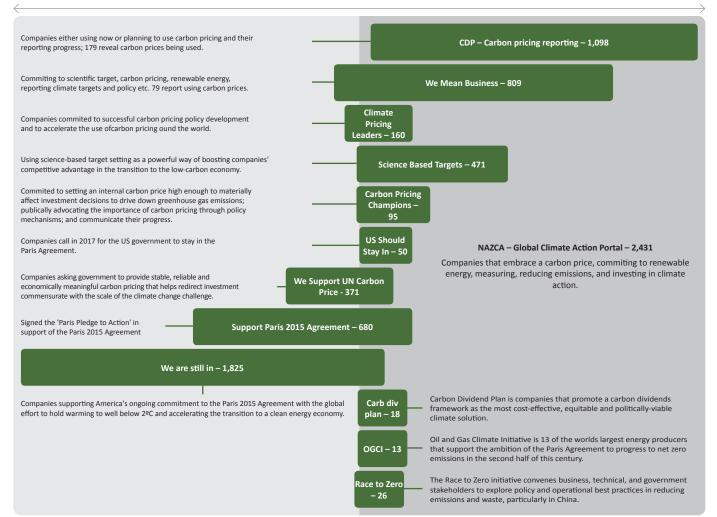
The Inevitable Policy Response (IPR) is a landmark project that aims to prepare financial markets for climate-related policy risks. What is "Inevitable" is some further policy response as the realities of climate change become increasingly apparent. The key questions are when this response will come, what policies will be used, and where the impact will be felt. IPR forecasts a response by 2025 that will be forceful, abrupt, and disorderly because of the delay. It quantifies the impact of this response on the real economy and financial markets. The project is a collaboration between PRI, Vivid Economics and Energy Transition Advisors. Business and investor support for action play an important part of "why" this response is likely to emerge over the next six years. These give an economic and market mandate to policy makers for action.

This study involves a unique meta-analysis of 2,490 corporates who have expressed **public support for the climate transition.** It draws on a range of online portals that record various aspects of this support, and includes many of the world's most significant companies.

Companies outside the NAZCA universe

This support remains significant for policy makers seeking a broad mandate for action even though some companies have also participated in activities or groups not aligned with a rapid climate transition. This reflects the official position of business, has typically been signed off at executive level, and is motivated by the substantial stake the companies have in the climate transition and the nature of the policy response. For many businesses thier support represents a long-term strategic outlook that recognises the impact that a disruptive policy transition to address climate change would have on future growth and performance. In addition, it represents commitments in which companies stake their reputation and to which the hold themselves publicly to their key stakeholders.





The key findings are:

- \$39tn of public companies by market capitalisation representing 72% of the MSCI World Index have publicly expressed support for the climate transition and/or are taking related action, while investors with at least \$34tn of Assets under Management similarly support such action.
- In terms of corporate support, we identify:
 - \$15tn support the Paris Agreement, with the ambition to limit global warming to "well below 2°C".
 - 2. \$7tn have called for carbon prices in some format.
 - 3. \$18tn have supported both the Paris Agreement and/or the introduction of Carbon Prices.
 - 4. \$35tn are using or plan to use Carbon Prices, have set science-based targets or other emissions targets.
 - Removing double counting this in total means \$39tn by market capitalisation representing 72% of the MSCI World Index have supported Paris and/or call for a carbon price and/or use, plan to use carbon prices and/or set emissions targets.
 - 6. In geographic terms, it is notable that of the 50% of the corporate support is based in North America.

- At a MSCI World Index sector level, it is notable around 75% of the Energy, Materials and Utilities sectors show support of some kind.
- While the focus of this study is on public companies, we note that some key unlisted government entities such as Saudi Aramco, China National Petroleum Company (CNPC), and Pemex. State Grid Corporation of China (SGCC) have shown support for Paris.
- Given an emphasis on land use in IPR, we note that the major food companies included in the study account for \$1tn of market cap, or 30% of the MSCI Consumer Staples sector.

In terms of investor support underpinning these companies, 2,547 PRI signatories which include asset owners, asset managers and service providers from 60 markets and accounting for at least \$89tn of Assets under Management (AUM) signed up to follow Responsible Investment. PRI signatories consistently nominate the climate their top ESG issue.

\$7.000 \$6,000 \$5,000 \$4.000 \$3,000 \$2.000 \$1.000 \$ Energy Materials Industrials Utilities Consumer Consumer Health Care Communi-Information Financials Real Estate Discretion-Staples cation Services Technology ary

Figure 1. Company Support for Climate Transition - by Type and GICS Sector Mkt cap, \$bn

Support Paris 2015 agreement

Calls for carbon price – active engagement

Support Paris 2015 & carbon pricing calls

Carbon pricing/SBT/WMB/NAZCA – practitioners



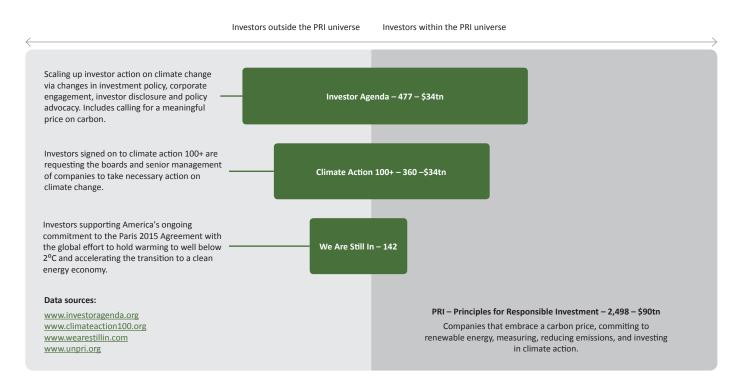
For the more specific focus of supporting the climate transition in terms of policy, action, supporting the Paris 2015 Agreement and related actions, we also identify¹:

- 77 asset owners/managers with \$34tn of AUM have signed up under the "Investor Agenda" calling on global policy leaders to support and implement the Paris 2015 Agreement, including putting a meaningful price on carbon.
- 360 investment managers and asset owners/investment managers with \$34tn of AUM as members of "Climate Action 100+" are committed to engaging with companies' management and boards to ensure their reporting and business strategies are consistent with the goals of the Paris 2015 Agreement.
- 142 asset owners/investment managers have signed up to the "We Are Still In initiative", re-iterating the need for continued U.S. support for the Paris 2015 Agreement.

- Removing duplicates across these three initiatives, in summary, we find 672 asset owners/ investment managers, accounting for at least \$34tn in AUM have expressed their support in driving the climate transition and calls to action by governments and companies.
- 50% of these 672 asset owners/investment managers are also signatories under the PRI framework.

Viewed in the round, this represents a striking signal of support for policies and actions that support the climate transition from businesses and investors, demonstrating a strong desire for certainty on the climate transition.

Yet, despite this rising chorus, when it comes to tangible political progress at events like the recent G20 summit, it can often seem like a case of two steps forward, one step back – or in the case of some governments, no steps forward.



¹ We have reported financial holding companies in the company data, (data as at August 2019). but not here as "investors" unless they have separate asset management groups which can be readily identified. That said, some financial holding companies will hold some direct investments. It is not possible to report the aggregates \$AUM of the Asset Owners as a separate figure given the inter-connection of many Asset Owners and Investment Managers.

The Implications – The Inevitable Policy Response (IPR)

This situation is not sustainable. The realities of climate change will inevitably catch up with governments across the globe – and they are beginning to. Alongside business demands outlined above, the pressure for policy action will increase and come from all angles – environmental, social, economic - fuelled by fears over national security; enabled by advances in technology and upward pressure by electorates and citizens to act.

Far more so than in the past, these triggers are aligning actors in a common direction, and growing awareness and momentum on climate issues makes a near-term, forceful policy response more likely:

- Falling cost of low carbon technology
- Demands for certainty from key stakeholders
- Popular unease at changing weather trends
- Civil society action, such as the school strikes
- Climate science research into impacts
- Security issues migration, food and water

In this climate, it is inconceivable that governments could not eventually react. The question is when and what. The 'ratchet mechanism' within the Paris Agreement also further increases the likelihood that governments will strengthen policy by 2025, by placing pressure on members to act at the same time – starting with the Global Stocktake (2023). This is not some global meeting that produces the result, but it provides a framework for governments at all levels to raise ambition.

Further, the most likely policy levers to secure an accelerated and just transition are starting to emerge. Including carbon pricing, which this study shows has strong corporate backing. More details of these likely policy levers will be outlined in the 'IPR: Policy Forecasts'.

A delayed, disruptive and forceful policy response by the mid-2020s is thus the most likely outcome.

The longer the delay, the more disruptive and costly the policy response will be to business and therefore investors. That's why, alongside calling for policy action now, to protect value, investors and companies must prepare for what they know to be the most likely outcome

But they're not. Despite the public support for increased climate policy from businesses and investors outlined in this paper, **we consider that the market default** is implicitly or explicitly the IEA New Policies Scenario (NPS). This assumes no further unannounced climate policies in the near term beyond those made in 2014 – highly improbable for the reasons outlined above.

So, markets aren't yet prepared for what is the most likely outcome – a delayed, forceful and disruptive policy response.

To help markets rectify this oversight, UN PRI is releasing a forecast of this Inevitable Policy Response (IPR). The forecast will assess the impact of climate related policy risk in a transparent and detailed portfolio context, and is designed to be a central business planning case for investors, corporates and regulators and as such can replace the IEA NPS. For leading investors who are already rigorously taking account of climate risk, the forecast will deliver a complementary analysis of probable near-term policy outcomes.

Alongside providing this forecast of likely policies, the IPR supports companies, investors, and other organisations, setting targets aligned with limiting warming to 1.5°C.



Introduction – The climate transition is a key area of uncertainty for markets

Markets, economies and businesses are famous for wanting 'certainty,' and the climate transition is a key area of uncertainty for investors and companies for many reasons, including transformation in technologies. The crucial factor driving uncertainty, however, is the timing of the transition.

Many would accept that over a 50-year time frame, highcarbon industries will transform dramatically. But how fast this transformation will occur, given the Paris Agreement's ambition for a climate transition of "well below 2°C", is the central question for markets and society.

The real and growing danger for investors and the economy today is a significant misallocation of capital - leading to financially stranded assets that impair balance sheets, weaken valuations and, at the extremes, threaten the financial system itself. While the whole economy will be affected, certain sectors such as energy, utilities and transport will face some of the most challenging transitions. They are very much "real asset" sectors, where the operational life of core assets can extend up to 40 years in some cases. Against this background it would seem probable that companies and their investors would call for increased certainty. And indeed, over the past few years, we have seen businesses become more and more vocal on climate change – including in those exposed sectors. But what exactly are businesses calling for, and how is this desire for certainty expressing itself? Arguably, many businesses could be agnostic on the direction of the climate transition. Their demands could simply be: "Paris signatories, tell us if you are committed to accelerating the transition or not – we have no position."

Methodology – A unique meta-analysis of public calls to action by companies

To complete this meta-analysis we pooled public sources, drawing from a variety of online portals that track company support and commitments to the climate transition and related issues. Double counting is eliminated. Some companies may be supporting in one or more categories. The focus of our study is publicly listed companies.

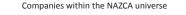
There are many ways a corporation could support the climate transition. For the purposes of this paper we have extracted from the on line portals the following aspects:

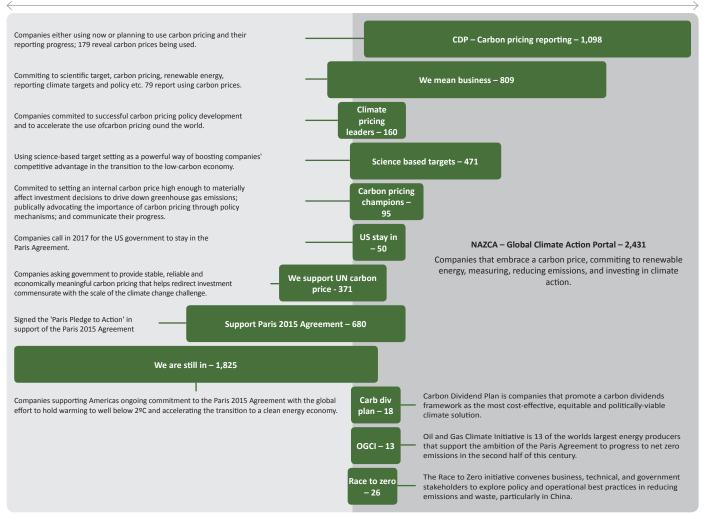
- Support for the Paris 2015 Agreement this implies increased policy ambition in line with the ratchet mechanism in the Agreement
- Calling for a Carbon Price this could be in various structures, but in the whole is focussed on ensuring a price is established

Companies outside the NAZCA universe

 Using/Planning to use Carbon Prices or setting Emissions Targets This process may in fact understate the sum-total of corporate calls to action, as we have been unable to conduct an analysis at the level of individual company statements. However, the process captures 2,490 companies, covering the majority (72%) of the MSCI World Index, allowing us to draw substantive conclusions about publicly listed companies.

Our meta database was driven by a variety of publicly available portal sources:







Given the nature of the commitments and the cooperation between the various climate action umbrella organizations, there is a natural overlap of reporting and commitments, so companies may appear in one or more datasets. Signatories in some coalitions require specific climate actions and reporting, whilst in others this is optional. The graphic above shows the general overlap of companies who have either signed up to a climate action coalition and/or who are reporting their climate actions and commitments.

NAZCA, the UN's Global Climate Action portal, is the most comprehensive, covering companies and investors who have registered various commitments, from setting a price on carbon, to energy efficiency targets, investment in renewables etc.

Companies reporting their climate actions to CDP automatically find their way into NAZCA. Likewise, companies committed to Science Based Targets will show up in NAZCA as well as the We Mean Business Coalition database.

Carbon Pricing Leader companies may also be required to not just commit to a carbon prices, but also actively assist in formulating and advocating for policy change.

At the other spectrum, coalitions like We Are Still In, have collated a wide number of companies supportive of the Paris 2015 Agreement, but may not require details on a company's current of planned climate actions.

Race to Zero is an initiative that seeks to focus Chinese-based corporations on climate supportive initiatives.

Figure 2.

NAZCA	The Global Climate Action portal is an online platform where non-Party stakeholders from around the globe - companies, cities, subnational regions, investors and civil society organizations - can display their commitments to act on climate change. Core data partners: CDP, Carbon Climate Registry, The Climate Group, the Investors on Climate Change, the UN Global Compact, the Covenant of Mayors, the Climate Bonds Initiative and the UN Environment's Climate Initiatives Platform. 2431 companies. <u>http://climateaction.unfccc.int/</u>
CDP - Carbon Price	Companies that annually report to CDP their carbon pricing actions. In 2017: 1389 companies reporting; 782 planning to use carbon prices in next 2 years; 607 using now; of which 179 publically reporting prices being used.
Reporting	https://www.cdp.net/en/campaigns/commit-to-action/price-on-carbon
We Mean Business	We Mean Business is a global nonprofit coalition working with the world's most influential businesses to take action on climate change. Committing to scientific targets, carbon pricing, renewable energy, reporting climate targets and policy etc. 863 companies.
signatory	https://www.wemeanbusinesscoalition.org/companies/#checkedOptions=Carbon%20pricing
Carbon Pricing Leaders	The Carbon Pricing Leadership Coalition brings together leaders from government, private sector, academia, and civil society to share experience working with carbon pricing and to expand the evidence base for the most effective carbon pricing systems and policies. Works with World Bank etc. 160 corporate members. <u>https://www.carbonpricingleadership.org/partners</u>
Science Based Targets	The Science Based Targets initiative champions science-based target setting by companies as a powerful way of boosting companies' competitive advantage in the transition to the low-carbon economy. 471 companies reporting; of which 301 are committed to SBT and 170 have SBT targets set. https://sciencebasedtargets.org/about-the-science-based-targets-initiative/
Carbon Pricing	95 companies signed up to The Business Leadership Criteria on Carbon Pricing. They agree to set an internal carbon price high enough to materially affect investment decisions to drive down greenhouse gas emissions; publicly advocate the importance of carbon pricing through policy mechanisms that take into account country specific economies and policy contexts; and communicate on progress over time on the two criteria above in public corporate reports.
Champions - UNGC	https://unfccc.int/news/united-nations-global-compact-business-leadership-criteria-on-carbon-pricing https://caringforclimate.org/workstreams/carbon-pricing/#champions
US Should Stay In Paris	In 2017 50 US and international corporations who may not have initially signed onto support Paris 2015 Agreement, urge the Trump administration to stay in the Agreement. <u>http://www.bteam.org/announcements/30-major-ceos-call-on-trump-stay-in-paris/</u> <u>https://www.ceres.org/news-center/press-releases/major-companies-sign-full-page-ads-urging-president-stay-paris-agreement</u>
We Support Price on	370 companies that expressed support for a price on carbon ahead of the UN Secretary-General's Climate Summit.
Carbon - UN	https://siteresources.worldbank.org/EXTSDNET/Resources/carbon-pricing-supporters-list-UPDATED-110614.pdf
Support Paris 2015	679 companies that are Non-Party signatories to Paris 2015 Agreement.
Agreement	http://www.parispledgeforaction.org/whos-joined/?filter=Business
We Are Still In	We Are Still In declaration started in June 2017 as a promise to world leaders that Americans would not retreat from the global pact to reduce emissions and stem the causes of climate change. 1825 businesses. https://www.wearestillin.com/
Carbon Tax & Dividend	The Climate Leadership Council is an international policy institute founded in collaboration with a who's who of business, opinion and environmental leaders to promote a carbon dividends framework as the most cost-effective, equitable and politically-viable climate solution. 18 major corporations founding partners.
Plan	https://www.clcouncil.org/founding-members/
Step Up Declaration Signatory	21 companies launched the Step Up Declaration, a new alliance dedicated to harnessing the power of emerging technologies and the fourth industrial revolution to help reduce greenhouse gas (GHG) emissions across all economic sectors and ensure a climate turning point by 2020. https://stepupdeclaration.org/thecoalition
Oil & Gas Climate	Thirteen of the world's largest energy producers that support the ambition of the Paris Agreement to progress to net zero emissions in the second half of this century.
Initiative	<u>https://oilandgasclimateinitiative.com/</u>
Race to Zero	The initiative convenes business, technical, and government stakeholders to explore policy and operational best practices in reducing emissions and waste, particularly in China. Race to Zero also highlights corporate commitments, with the goal of inspiring others. 26 companies. https://www.joinracetozero.org



1. Total Company Support combining the three aspects we are focussing on

- Support for the Paris 2015 Agreement this implies increased policy ambition in line with the ratchet mechanism in that Agreement.
- Calling for a Carbon Price this might be in various structures but is focussed on getting a price established.
- Using/Planning to use Carbon Prices or implementing Emissions reductions in some way.

Double counting is eliminated. Some companies may be supporting in one or more categories.

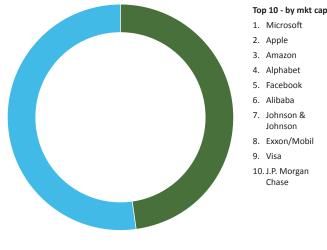
- There are 2,490 companies with a combined market cap of \$39tn who support the climate transition, representing 52% of the listed world equity markets.
- This is a significant part of the listed and large cap world.
- The Top 10 globally are almost all US based companies, with Tech dominating given their large market caps, with one Energy player, Exxon/Mobil.

2. Company Support by Region

- Reflecting the share of global market cap, companies from North America dominate followed by Europe and Japan.
- Given its view of climate, as business focussed the current US administration should find this significant.
- Many large cap Chinese companies are absent, which may reflect a combination of reasons (or their lack of engagement into the reporting world that the developed listed companies have embraced).

Figure 3. Market Capitalisation of Companies Supporting the Climate Transition

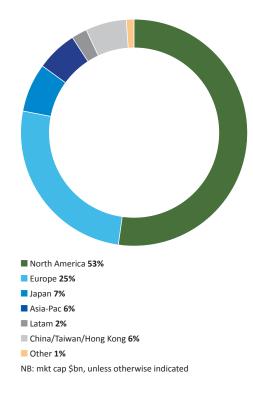
Covering 52% of major global equity market indexes-\$74 trillion



Other listed companies 48%
Companies supporting climate transition 52%
NB: mkt cap \$bn, unless otherwise indicated

Figure 4. Companies Supporting the Climate Transition by Region & Market Capitalisation

2,490 companies, \$38.6 trillion



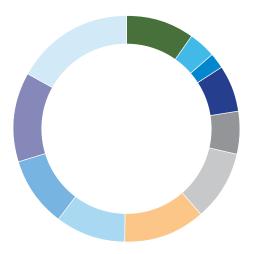
3. The Company sector context

- Sectors are important to see how support breaks down between high emitting supply side sectors (fossil fuels), high emitting demand side sectors like utilities, and more consumer orientated sectors.
- We use the GICS categories of the MSCI World Index to look at sector coverage.
- These supporting companies account for 72% of the MSCI World Index by aggregate market capitalisation.
- On the high-emitting supply side of the economy:
 - Energy is 75% covered and
 - Materials (includes Mining), at 74%
- Key to demand is:
 - Utilities, 74% covered, and
 - Industrials, 68% covered

- Within Consumer Discretionary:
 - the Automotive sector is 72% covered and
 - within Industrials, 70% of Transportation is covered
- In the other consumer orientated areas:
 - Information technology covered at 68%
 - Consumer discretionary at 73%
- Low coverage is found in:
 - Financials at 55% who tend argue they would represent as a double count in terms of financed emissions and Real Estate at 34% is low.

Figure 5: Companies Supporting the Climate Transtion by GICS Sector - by mkt cap \$bn

represent 72% of the MSCI Global Equties Index



- Communication services 10%
- Utilities 4%
- Real estate 2%
- Energy 7%
- Materials 6%
- Industrials 10%
- Consumer discretionary 12%
- Consumer staples 10%
- Healthcare 10%
- Financials 13%
- Information technologies 17%
- NB: mkt cap \$bn, unless otherwise indicated

4. Companies Supporting the Climate Transition – Top 10 Companies by Sector and by Region:

Figure 6. Companies supporting the climate transition - Top 10 by sector

Energy

Exxon/Mobil Royal Dutch Shell plc Chevron Corporation BP plc Total Petróleo Brasileiro SA–Petrobras Brazil China Pet and Chem Corp - Sinopec PTT Exploration & Production ConocoPhillips Enbridge Inc.

Materials

BHP Group / (Billiton Limited) Dow Chemical Company / Dupont Rio Tinto BASF SE Vale Glencore plc Air Liquide CNBM - China National Building Materials Ecolab Inc. Air Products & Chemicals Inc

Industrials

Boeing Company 3M Company Union Pacific Honeywell International Inc. United Technologies Corporation Airbus Netherlands United Parcel Service - UPS General Electric Company Siemens AG Lockheed Martin Corporation

Utilities

Duke Energy Corporation Enel SpA EDF - Electricite de France Dominion Energy Iberdrola SA Southern Power Company Exelon Corporation American Electric Power Company, Inc. HK Electric Investments National Grid PLC

Consumer Discretionary -Autos & Components

Toyota Motor Corporation Volkswagen AG Daimler AG General Motors Company BMW AG Tesla Honda Motor Company Nissan Motor Co., Ltd. Continental AG Fiat Chrysler Automobiles NV

Consumer Staples

Nestlé Wal-Mart Stores, Inc. Procter & Gamble Company Coca-Cola Company (The) PepsiCo, Inc. AB Inbev Unilever L'Oréal Philip Morris International Costco Wholesale Corp.

Consumer Discretionary

Amazon.com Inc. Alibaba Home Depot LVMH - Louis Vuitton Group Toyota Motor Corporation McDonald's Corporation NIKE Inc. Inditex Starbucks Corporation Lowe's Companies, Inc.

Healthcare

Johnson & Johnson (J & J) Pfizer Inc. United Health Roche Holding AG Novartis International AG Merck & Co., Inc. Abbott Laboratories Novo Nordisk A/S Eli Lilly AbbVie Inc.

Financials

JPMorgan Chase & Co. China Construction Bank Co Bank of America E.SUN Commercial Bank Wells Fargo & Company HSBC Holdings plc Citi Group Allianz Commonwealth Bank of Australia Royal Bank of Canada

All Sectors

Microsoft Corporation Apple Inc. Amazon.com Inc. Alphabet, Inc. Facebook Alibaba Johnson & Johnson (J & J) Exxon/Mobil Visa JPMorgan Chase & Co.

Communication Services

Alphabet Inc. Facebook Verizon Communications Inc. AT&T China Mobile China Walt Disney Group Comcast Corp. Netflix Inc. Softbank Group Corp. Deutsche Telekom AG

Information Technology

Microsoft Corporation Apple Inc. Visa Intel Corp. Mastercard Cisco Systems, Inc. Samsung Electronics Taiwan Semiconductor Manufacturing Oracle Corp. SAP SE

Real Estate

Simon Property Group Inc China Vanke A Equinix, Inc. Welltower AvalonBay Communities, Inc. Mitsubishi Estate Link Real Estate Investment Trust Ventas Inc Daiwa House Industry Co., Ltd. Boston Properties

Industrials - Transportation

Union Pacific United Parcel Service Canadian National Railway Company CSX Corp. Norfolk Southern Corp. FedEx Corporation Deutsche Post DHL Group MTR Corporation East Railway Company Delta Air Lines

Figure 7. Companies Supporting the Climate Transition – Top 10 by region

North America

Microsoft Corporation Apple Inc. Amazon.com Inc. Alphabet Inc. Facebook Johnson & Johnson (J & J) Exxon/Mobil Visa JPMorgan Chase & Co. Wal-Mart Stores, Inc.

Latam

Petróleo Brasileiro SA–Petrobras Brazil Itaú Unibanco Holding S.A. Banco Bradesco S/A Vale Itausa Investimentos Itau S.A. Klabin SA Grupo Financiero Banorte S.A.B. de C.V. Suzano Papel & Celulose CPFL Energia SA Centrais Eletricas Brasileiras S/A (ELETROBRAS)

Other

Lukoil OAO PJSC Gazprom Firstrand Limited Standard Bank Group Sasol Limited Vodacom Group Anglo American Platinum MTN Group Polyus Kumba Iron Ore

Europe

Nestlé Royal Dutch Shell plc Roche Holding AG Novartis International AG LVMH - Louis Vuiton Group HSBC Holdings plc AB Inbev Unilever L'Oréal BP plc

Japan

Toyota Motor Corporation Softbank Group Corp. Nippon Telegraph & Telephone Corporation NTT DOCOMO, Inc. Takeda Pharmaceutical Company Limited Sony Corporation KDDI Corporation Sumitomo Mitsui Trust Holdings, Inc. Fast Retailing Co., Ltd. Honda Motor Company

Asia-Pac

Samsung Electronics BHP Group / (Billiton Limited) Tata Consultancy Services Commonwealth Bank of Australia PTT Exploration & Production Westpac Banking Corporation ITC Limited Hindustan Construction Ltd (HCC) National Australia Bank Infosys Limited

China/Taiwan/Hong Kong

Toyota Motor Corporation Softbank Group Corp. Nippon Telegraph & Telephone Corporation NTT DOCOMO, Inc. Takeda Pharmaceutical Company Limited Sony Corporation KDDI Corporation Sumitomo Mitsui Trust Holdings, Inc. Fast Retailing Co., Ltd. Honda Motor Company



5. Companies Supporting the Paris Agreement

The key building block of climate transition support in the 2015 Paris Agreement. This included two key elements:

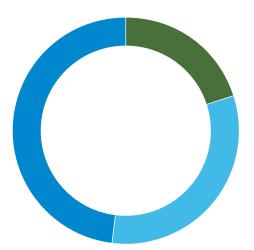
- Recording policy initiatives at all levels of government with the ambition to ratchet these up at least every 5 years. IPR timing is based around this framework.
- Aspire and work towards a "well below 2°C" outcome which IPR calls for
 - Supporting the Paris Agreement accounts for \$15tn of market cap or 21% of the total market cap covered.
 - This is significant.

6. At the Regional level Companies Supporting Paris

 Interestingly again, by market cap North America dominates, assisted of course by the large size of its IT/Communications Services sectors.

Figure 8. Support Paris 2015 Agreement

\$15.2 trillion mkt.cap., 305 companies

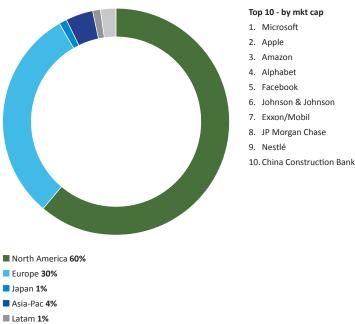


Support Paris 2015 20%

- Other climate transition support 32%
- Other listed no support identified 48%
- NB: mkt cap \$bn, unless otherwise indicated

Figure 9. Support Paris 2015 Agreement – By Region

\$15.2 trillion mkt. cap.



China/Taiwan/Hong Kong 2%

Other 0%

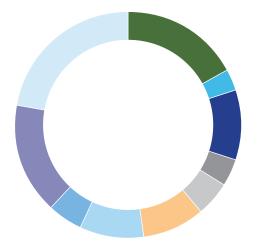
NB: mkt cap \$bn, unless otherwise indicated

7. At the Sector level Companies Supporting Paris

- 70-75% of high carbon sectors in the MSCI Global Sector Indexes support Paris:
 - Utilities
 - Energy
 - Materials
 - Transportation and Autos

Figure 10: Support Paris 2015 Agreement - by GICS sector, by mkt cap \$bn

\$15.2 trillion mkt cap, 305 companies, 31% MSCI Global Index



- Communication services 17%
- Utilities 3%
- Real estate 0%
- Energy **10%**
- Materials 4%
- Industrials 5%
- Consumer discretionary 9%
- Consumer staples 9%
- Healthcare 5%
- Financials 16%
- Information technologies 22%

NB: mkt cap \$bn, unless otherwise indicated



8. Top 10 Companies at the sector level supporting Paris

Figure 11. Support Paris 2015 Agreement – Top 10 by sector

Energy

Exxon/Mobil Royal Dutch Shell Chevron BP plc Total Petrobras Eni SpA Occidental Petroleum Corp. Neste Oil Corporation Repsol

Materials

BHP Group / (Billiton Limited) Dow / Dupont Rio Tinto BASF SE Anglo American LafargeHolcim Ltd Koninklijke DSM / Royal DSM Novozymes A/S Stora Enso Oyj Solvay S.A.

Utilities

EDF - Electricite de France Dominion Energy Iberdrola SA National Grid PLC Engie Ørsted (DONG Energy A/S) Gas Natural SDG SA Fortum Oyj Verbund AG CPFL Energia SA

Industrials

3M Company Siemens AG Vinci Hindustan Construction Ltd (HCC) Henkel AG & Co. KGaA Schneider Electric ABB Rockwool International A/S Johnson Controls plc Kone Oyj

Consumer Staples

Nestlé Procter & Gamble Company Coca-Cola Company (The) Unilever Philip Morris International Diageo Plc Danone General Mills Inc. Tesco Coca-Cola European Partners

Consumer Discretionary

Amazon.com Inc. LVMH - Louis Vuitton Group Kering Sony Corporation Tesla adidas AG VF Corporation Michelin Sodexo Tiffany & Co.

Healthcare

Johnson & Johnson (J & J) Novartis International AG Takeda Pharmaceutical Co. Koninklijke Philips NV

Financials

JPMorgan Chase & Co. China Construction Bank Co Bank of America HSBC Holdings plc Citigroup Allianz Morgan Stanley Goldman Sachs Group Banco Bradesco S/A Westpac Banking Corporation

Communication Services

Alphabet, Inc. Facebook Verizon Communications Inc. AT&T Walt Disney Group Netflix Inc. Deutsche Telekom AG T Mobile USA inc Vodafone Group Telefonica

Information Technology

Microsoft Corporation Apple Inc. Intel Corp. Cisco Systems, Inc. Samsung Electronics Adobe Systems, Inc. Salesforce Accenture plc ASM International, N.V. Uber Inc.

Real Estate

Gecina Covivio ICADE Intershop Holding AG

9. Companies Calling for a Carbon Price

Carbon pricing has always been seen as a key signal in climate policy.

While there are many different approaches to implementation, the establishing of a price on carbon has important support.

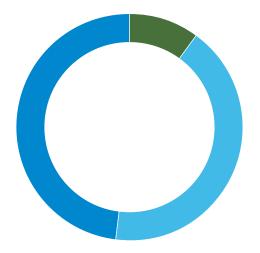
- Only 10% actually actively calling for a carbon price, using the latest available CDP data for 2017. We expect this to increase when more up to date data is released.
- Other climate transition support represents those with other engagements, like supporting Paris 2015, using/planning to use carbon prices, using science-based targets, emissions reduction or other related climate mitigation activities (including land-use management).

10. Companies Supporting a Carbon Price at a Regional level

- Given the EU ETS, no surprise Europe dominates here.
- At 33% North America is significant

Figure 12. Calling for a Carbon Price

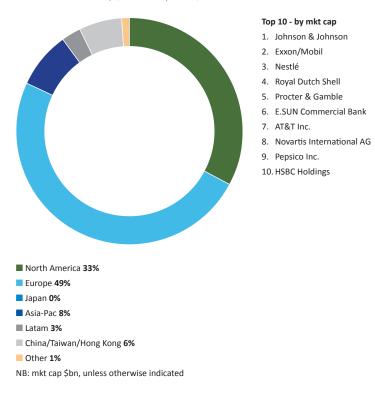
\$7.1 trillion mkt.cap., 486 companies, 15% MSCI Global Index



Calls for carbon price 10%
Other climate transition support 42%
Other listed – no support identified 48%
NB: mkt cap \$bn, unless otherwise indicated

Figure 13. Calling for a Carbon Price - By Region

\$7.1 trillion mkt. cap., 486 companies, 15% MSCI Global Index



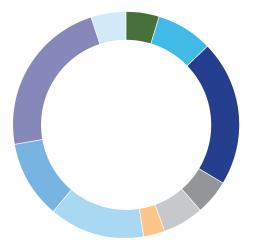


11. Companies Supporting a Carbon Price by sector

 Importantly, companies that account for just over 50% of the MSCI World Energy Sector are calling for a carbon price.

Figure 14: Calling for a Carbon Price - by GICS sector, mkt cap \$bn

\$7.1 trillion mkt cap, 486 companies, 15% MSCI Global Index



- Communication services 5%
- Utilities 8%
- Real estate 0%
- Energy 21%
- Materials 5%
- Industrials 6%
- Consumer discretionary 3%
- Consumer staples 14%
- Healthcare 11%
- Financials 23%
- Information technologies 5%
- NB: mkt cap \$bn, unless otherwise indicated

12. Top 10 Companies Supporting a Carbon Price by Sector

Figure 15. Calling for Carbon Prices - Top 10 by sector

Energy

Exxon/Mobil Royal Dutch Shell plc BP plc Total China Pet. and Chem Corp - Sinopec PTT Expl. & Prod. Public Co ConocoPhillips Enbridge Inc. Equinor / Statoil ASA Eni SpA

Materials

BHP Group / (Billiton Limited) Vale China Steel Corporation LafargeHolcim Ltd Klabin SA Novozymes A/S Solvay S.A. Umicore Braskem S/A Teck Resources Limited

Utilities

Enel SpA EDF - Electricite de France Iberdrola SA Exelon Corporation National Grid PLC Engie DONG Energy A/S Gas Natural SDG / Gas Natural Fenosa E.ON SE Fortum Oyj

Industrials

Siemens AG Hindustan Construction Ltd (HCC) Schneider Electric Jain Irrigation Systems Kone Oyj Saint-Gobain Aeroports de Paris - ADP Ferrovial S.A. Vestas Wind Systems A/S YTL Corporation Berhad

Consumer Staples

Nestlé Procter & Gamble Company PepsiCo, Inc. Unilever CVS Health Carrefour Loblaw Companies Coca-Cola HBC AG Natura Cosmeticos SA Vina Concha y Toro S A

Consumer Discretionary

General Motors Company RELX Group Plc Reed Elsevier Wesfarmers H & M, Hennes & Mauritz AB Michelin Mahindra & Mahindra Pirelli & C. S.p.A. Kingfisher Canadian Tire Corporation, Limited Coway Co Ltd

Healthcare

Johnson & Johnson (J & J) Novartis International AG Novo Nordisk A/S Koninklijke Philips NV Coloplast A/S

Financials

E.SUN Commercial Bank HSBC Holdings plc Allianz Royal Bank of Canada TD Bank Group Hermes Investment Management Scotiabank Westpac Banking Corporation AXA Group BNP Paribas

Communication Services

AT&T Telenor Group BT plc Chunghwa Telecom Co.Ltd TELUS Corporation

Information Technology

SAP SE EMC Corporation / DELL - EMC Infosys Limited Autodesk, Inc. Nokia Oyj Hexagon Digital Delta Electronics Inc. Atos SE Ricoh Co., Ltd. First Solar Inc

Real Estate

Swire Pacific Limited Hang Lung Properties Limited Sinyi Realty



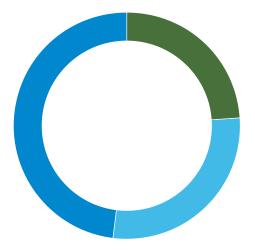
13. Companies Supporting Paris and calling for a Carbon Price

Combining both Support for Paris and calls for Carbon Pricing (without double counting) gives the most policy concentrated measure

- Almost 25% of companies, comprising almost \$18tn of mkt cap or 38% of the MSCI Global Index are supporting the Paris 2015 Agreement and/or calling for a carbon price.
- The Other Climate Transition Support companies are using/planning to use carbon prices, using science-based targets, emissions reductions and related climate mitigation actions. While these are policy supportive, they are more implementation orientated.

Figure 16. Support Paris 2015 Agreement & Calling for Carbon Prices

\$17.9 trillion mkt cap, 674 companies, 38% MSCI Global Index



Paris 2015 Support & Carbon Pricing Calls 24%
Other climate transition support 28%

Other listed – no support identified 48%

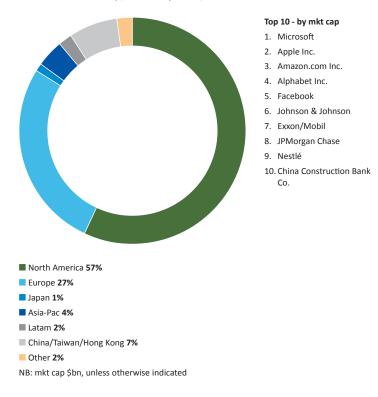
NB: mkt cap \$bn, unless otherwise indicated

14. Companies Supporting Paris and calling for a Carbon Price by Region

 When combined like this close to 60% are North American based companies.

Figure 17. Support Paris 2015 Agreement & Calling for a Carbon Price

\$17.9 trillion mkt cap, 674 companies, 38% MSCI Global Index

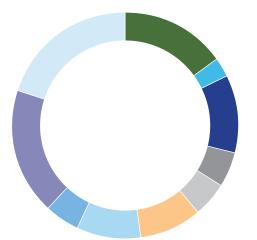


15. Companies Supporting Paris and calling for a Carbon Price by sector

• When combined in this way 64% of the energy sector support Paris and or a carbon price.

Figure 18: Support Paris 2015 Agreement & Calling for Carbon Prices - by sector, \$bn

\$17.9 trillion mkt cap, 674 companies, 38% MSCI Global Index



- Communication services 15%
- Utilities 3%
- Real estate 0%
- Energy 11%
- Materials 5%
- Industrials 5%
- Consumer discretionary 9%
- Consumer staples 9%
- Healthcare 5%
- Financials 18%
- Information technologies 20%
- NB: mkt cap \$bn, unless otherwise indicated



16. Top 10 Companies by sector support Paris and calling for a Carbon Price

Figure 19. Support Paris 2015 & Carbon Pricing Calls – Top 10 by sector

Energy

Exxon/Mobil Royal Dutch Shell plc Chevron Corporation BP plc Total Petrobras Brazil China Pet & Chem Corp - Sinopec PTT Exploration & Production ConocoPhillips Enbridge Inc.

Materials

BHP Group / (Billiton Limited) Rio Tinto BASF SE Vale Syngenta AG China Steel Corporation Anglo American LafargeHolcim Ltd Klabin SA Koninklijke DSM / Royal DSM

Utilities

Enel SpA EDF - Electricite de France Dominion Energy Iberdrola SA Exelon Corporation National Grid PLC Engie Ørsted (DONG Energy A/S) Natural SDG/ Gas Natural Fenosa E.ON SE

Industrials

3M Company Siemens AG Vinci Hindustan Construction Ltd (HCC) Henkel AG & Co. KGAA Schneider Electric RELX Group Plc Reed Elsevier ABB Rockwool International A/S Johnson Controls plc

Consumer Staples

Nestlé Procter & Gamble Company Coca-Cola Company (The) PepsiCo, Inc. Unilever Philip Morris International Diageo Plc Danone General Mills Inc. Tesco

Consumer Discretionary

Amazon.com LVMH - Louis Vuitton Group Kering Sony Corporation General Motors Company Tesla adidas AG VF Corporation Wesfarmers H & M, Hennes & Mauritz AB

Healthcare

Johnson & Johnson (J & J) Novartis International AG Novo Nordisk A/S CVS Health Takeda Pharmaceuticals Koninklijke Philips NV Coloplast A/S

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Communication Services

Alphabet, Inc. Facebook Verizon Communications Inc. AT&T Walt Disney Group Netflix Inc. Deutsche Telekom AG T Mobile USA inc Vodafone Group Telefonica

Information Technology

Microsoft Corporation Apple Inc. Intel Corp. Cisco Systems, Inc. Samsung Electronics SAP SE Adobe Systems, Inc. Salesforce Accenture plc ASM International, N.V.

Real Estate

Swire Pacific Limited Gecina Hang Lung Properties Limited Covivio ICADE Intershop Holding AG Sinyi Realty

17. Companies using/planning to use Carbon Prices or setting targets

This aspect looks at the application or implementation of climate transition actions:

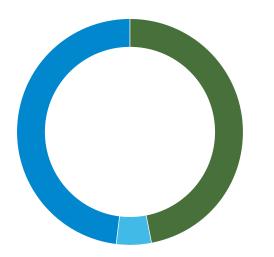
- Using a carbon price in business analysis.
- Planning to use a carbon price in business analysis.
- Setting a Science Based or other target.

This does not track how companies plan use or plan to use carbon prices.

- A large proportion 47% of companies claim to be either using carbon prices in some way, planning to use them in the next 2 years, implementing science-based targets, setting emission reduction goals, or using other climate mitigation activities.
- EU and other regions already have carbon prices which makes some of this natural.

Figure 20. Using/Planning to use Carbon Prices, Science Based Targets, and Emissions Reductions

\$35 trillion mkt. cap., 2,135 companies, 65% MSCI Global Index



- Using & Planning to use Carbon Pricing/implementing Science Based Targets/ Emissions Reductions 47%
- Other Support Paris 2015 Agreement 5%
- Other listed no support identified 48%

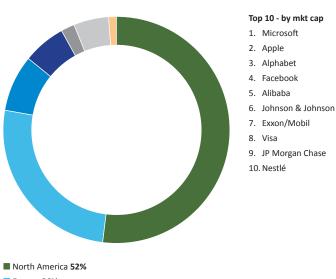
NB: mkt cap \$bn, unless otherwise indicated

18. Companies using/planning to use Carbon Prices or setting targets at regional level

Interestingly North America again leads at a regional level.

Figure 21. Using Carbon Prices, Science Based Targets, Emissions Reductions

\$35 trillion mkt. cap., 2,135 companies, 65% MSCI Global Index



- Europe **26%**
- Japan 8%
- Asia-Pac 6%
- Latam 2%
- China/Taiwan/Hong Kong 5%
- Other 1%
- NB: mkt cap \$bn, unless otherwise indicated

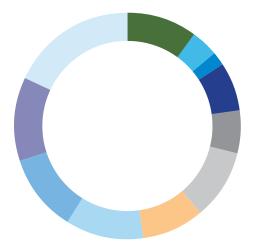


19. Companies using/planning to use Carbon Prices or setting targets at a sector level

- The energy sector at 73% (of the MSCI Global Sector) is well represented here.
- Utilities appear as active with 69% covered.
- Materials including mining are also well represented at 72%.

Figure 22. Using Carbon Prices, Science Based Targets, Emissions Reductions – by GICS sector, mkt cap \$bn

\$35 trillion mkt cap, 2,135 companies, 65% MSCI Global Index



- Communication services 10%
- Utilities 4%
- Real estate 2%
- Energy 7%
- Materials 6%
- Industrials 10%
- Consumer discretionary 9%
- Consumer staples 11%
- Healthcare 11%
- Financials 12%
- Information technologies 18%
- NB: mkt cap \$bn, unless otherwise indicated

20. Top 10 Companies using/planning to use Carbon Prices or setting targets

Figure 23. Using & Planning to use Carbon Prices/Science Based Targets/Emissions Reductions - Top 10 by sector

Energy

Exxon/Mobil Royal Dutch Shell plc Chevron Corporation BP plc Total Petróleo Brasileiro SA–Petrobras Brazil China Pet. and Chem. Corp. - Sinopec PTT Expl. & Prod. Public Co. Limited ConocoPhillips Enbridge Inc.

Materials

BHP Group / (Billiton Limited) Dow / Dupont Rio Tinto BASF SE Vale Glencore plc Air Liquide CNBM - China National Build. Mat. Ecolab Inc. Syngenta AG

Utilities

Duke Energy Corporation Enel SpA EDF - Electricite de France Iberdrola SA Southern Power Company Exelon Corporation American Electric Power Company, Inc. HK Electric Investments National Grid PLC Hong Kong & China Gas

Industrials

3M Company Honeywell International Inc. United Technologies Corporation Airbus United Parcel Service - UPS General Electric Company Siemens AG Lockheed Martin Corporation Safran Canadian National Railway Company

Consumer Staples

Nestlé Wal-Mart Stores, Inc. Procter & Gamble Company Coca-Cola Company (The) PepsiCo, Inc. AB Inbev Unilever L'Oréal Philip Morris International Altria Group, Inc.

Consumer Discretionary

Alibaba Toyota Motor Corporation McDonald's Corporation NIKE Inc. Inditex Starbucks Corporation Lowe's Companies, Inc. Volkswagen AG Kering TJX Companies Inc.

Healthcare

Johnson & Johnson (J & J) Pfizer Inc. Roche Holding AG Novartis International AG Merck & Co., Inc. Abbott Laboratories Novo Nordisk A/S Eli Lilly AbbVie Inc. Amgen Inc.

Financials

JPMorgan Chase & Co. Bank of America E.SUN Commercial Bank Wells Fargo & Company HSBC Holdings plc Citigroup Allianz Commonwealth Bank of Australia Royal Bank of Canada Itaú Unibanco Holding S.A.

Communication Services

Alphabet, Inc. Facebook Verizon Communications Inc. AT&T China Mobile China Walt Disney Group Comcast Corp. Softbank Group Corp. Deutsche Telekom AG NTT Corporation

Information Technology

Microsoft Corporation Apple Inc. Visa Intel Corp. Mastercard Cisco Systems, Inc. Samsung Electronics Taiwan Semiconductor Manufacturing Oracle Corp. SAP SE

Real Estate

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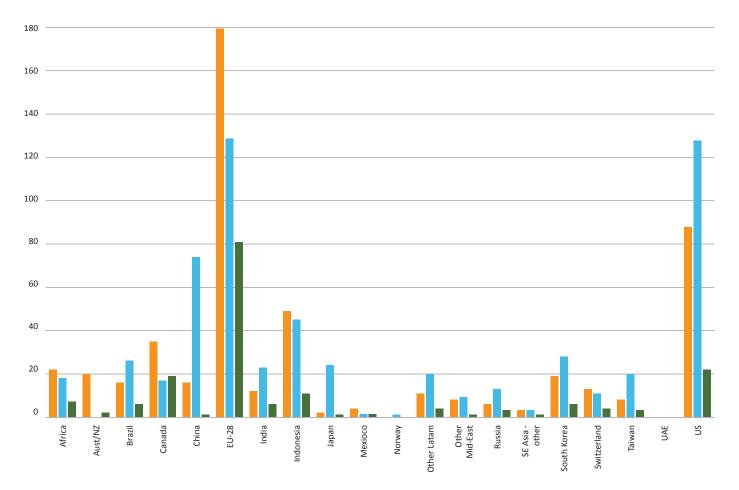
21. Carbon Prices by region being used by Companies

Here we look at different ways companies are using carbon pricing at a regional level – if they are currently using them, or planning to, or revealing the price.

- At a more detailed level, there are more companies planning to use a carbon price in the next two years in some way according to the CDP report for 2017.
- One would expect that the 2018 CDP report will show an increase in those using and planning to use a carbon price.
- The number actually revealing what those processes are is again smaller.

Figure 24. CDP Carbon Price Reporting – By Action & Region

1,102 reporting, 512 using, 590 planning, 179 revealing price used



Using carbon prices

Planning to use carbon prices

Revealing carbon price used

22. What Carbon Prices are being revealed

Companies can use carbon prices in many different ways. Again this data does not show us how they are applying them.

- The global median price is around US\$22 ton.
- The US and EU median price is close to this, respectively US\$23 ton and US\$22.26 ton.

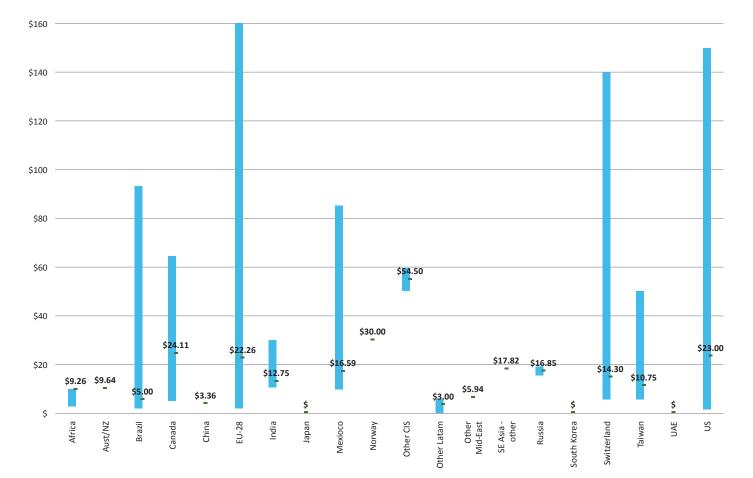


Figure 25. Carbon Pricing Assumptions By Region - High, Low, Median

Global Median \$21.87



Appendix: World Equity Markets sources

World	\$ bn	Americas	\$ bn	Europe	\$ bn
US	\$36,398	Brazil - IBRX	\$928	Austria - ATX Prime	\$125
ΤΟΡΙΧ	\$5,156	Chile - CLX	\$227	Belgium - BEL20	\$293
Shanghai Composite	\$5,117	Mexico - IPC	\$317	Denmark - OMX	\$374
Hang Seng	\$2,761	Canada - TSX	\$1,426	Finland - OMX ALL	\$284
FTSE-100 & 250	\$2,715	US - NYSE, NASDAQ, AMEX	\$36,398	Germany - Prime	\$2,059
Paris - CAC All	\$2,667			Italy - FTSE Milan	\$541
India - BSE-500	\$2,067			Madrid - SMSI	\$782
Germany - Prime	\$2,059			Netherlands - AEX	\$840
Swiss - All Share	\$1,622			Norway - All Share	\$310
Toronto - TSX	\$1,426			Paris - CAC All	\$2,667
Australia - ASX 200	\$1,158			Portugal - PSI	\$66
KOSPI 200	\$1,100			Sweden - OMX Benchmark	\$908
Brazil - IBRX	\$928			Swiss - All Shares	\$1,622
Sweden Benchmark	\$908			UK - FTSE-100 & 250	\$2,715
AEX - Netherlands	\$840				
Madrid - SMI	\$782				
"TSEC Taiwan 50 "	\$670				
THAI - SET-100	\$614				
MOEX - RU	\$574				
FTSE Milan	\$541				
JAKARTA - IDX	\$503				
"FTSE China A50"	\$390				
OMX - Denmark	\$374				
South Africa - JSE-40	\$371				
Mexico - IPC	\$317				
Norway - All Share	\$310				
BEL20 - Belgium	\$293				
Singapore - STI	\$289				
Helsinki - OMX ALL	\$284				
KLCI - 30	\$253				
Chile - CLX	\$227				
Austria - ATX Prime	\$125				
BIST 100 Turkey	\$114				
Portugal	\$66				
NZ - NZSX	\$61				
	\$74,080		\$39,296		\$13,586

Asia	\$ bn	Pacific	\$ bn	Other	\$ bn
China - FTSE China A50	\$390	Australia - ASX 200	\$1,158	Russia - MOEX	\$574
China - HangSeng	\$2,761	NZ - All Share	\$61	South Africa - JSE-40	\$371
China - Shanghai Composite	\$5,117			Turkey - BIST 100	\$114
India - BSE-500	\$2,067				
JAKARTA - IDX	\$503				
Japan - TOPIX	\$5,156				
KLCI - 30	\$253				
Singapore - STI	\$289				
South Korea - KOSPI 200	\$1,100				
Taiwan - TSEC 50	\$670				
THAI - SET-100	\$614				
	\$18,922		\$1,218		\$1,059

Acknowledgement

This work was supported by:









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The six Principles for Responsible Investment are a voluntary and aspirational set of investment principles that offer a menu of possible actions for incorporating ESG issues into investment practice. The Principles were developed by investors, for investors. In implementing them, signatories contribute to developing a more sustainable global financial system.

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