

GLOBAL CLIMATE INDEX 2017

RATING THE WORLD'S INVESTORS ON
CLIMATE RELATED FINANCIAL RISK

ASSET
OWNERS
DISCLOSURE
PROJECT



PREFACE

The fifth AODP Global Climate 500 Index launches after a year of rapid developments in articulating the financial risks of climate change to the global economy. The Paris Agreement entered into force in November, and at time of writing has been ratified by 141 countries representing over 82% of global emissions. The speed of ratification demonstrates how seriously nations are committed to decarbonising their economies and keeping climate change below 2°C.

The world's first law on mandatory climate disclosure for institutional investors took effect in France, setting a model for other countries.

The Task Force on Climate-related Financial Disclosures (TCFD) delivered its recommendations to the Financial Stability Board in December. This comprehensive guide for all sectors of the economy is due to be considered by the G20 in July and will likely see big changes in the way both companies and investors report this information.

Despite early signs of a rollback on climate policy in the US, long-term climate risk management cannot be unlearned by the investment community, where the majority have now begun to take action. Consideration of the financial implications of climate change is on an upward long term trajectory, transcending short-term political cycles.

CONTENTS

EXECUTIVE SUMMARY 03
 ASSET OWNER LEADERS 11
 ASSET OWNER LAGGARDS 15
 ASSET MANAGERS 17
 REGIONS 21
 COUNTRIES 23
 CAPABILITIES 31
 APPENDIX 55

ABOUT AODP

The Asset Owners Disclosure Project (AODP) is an independent global not-for-profit organisation that recognises the specific financial risk attributes of climate change. AODP has developed the world's leading reporting framework for institutional investors encompassing the disclosure and management of climate risk.

Climate risk is of course only one risk that investors have to analyse. We acknowledge this. However, as a multi-sector, multi-asset class and non-diversifiable risk, we believe it requires special attention.

The AODP Global Climate 500 Index rates the world's 500 biggest asset owners – pension funds, insurers, sovereign wealth funds, foundations and endowments – on their success at managing climate risk within their portfolios, based on direct disclosures and publicly available information.

This year also sees the launch of the first AODP Global Climate Index for Asset Managers, rating the world's 50 largest asset managers on their success at managing the financial risks of climate change for their clients. It follows the same methodology.

Asset owners and managers are scored on three key capabilities which align with the four key areas highlighted by the FSB Task Force on Climate-related Financial Disclosures: Governance & Strategy, Portfolio Carbon Risk Management and Metrics & Targets. They are graded from AAA to D while those with no evidence of action are rated X.

While the underlying questions remain the same as last year, we have calibrated our assessment categories with the FSB's recommendations to help asset owners and asset managers prepare for potential future reporting requirements. This alignment provides institutional investors with reporting consistency, trend analysis and an effective framework to implement the strategies required to meet, and perhaps more importantly exceed the FSB's expected guidelines. Further insight on our methodology can be found in the Appendix to this report and on our website.

To help readers understand how investors are developing in their approach to climate change risks and opportunities, we have designated the following categories based on rating. The proportion of Index participants falling into each category this year is as shown below.

Category	Rating Band	Asset Owners	Asset Managers
Leaders	A-AAA	Top 7%	Top 4%
Challengers	B-BBB	7% - 14%	4% - 20%
Learners	C-CCC	14% - 22%	20% - 46%
Bystanders	D	22% - 60%	46% - 94%
Laggards	X	Bottom 40% Zero score	Bottom 6% Zero score

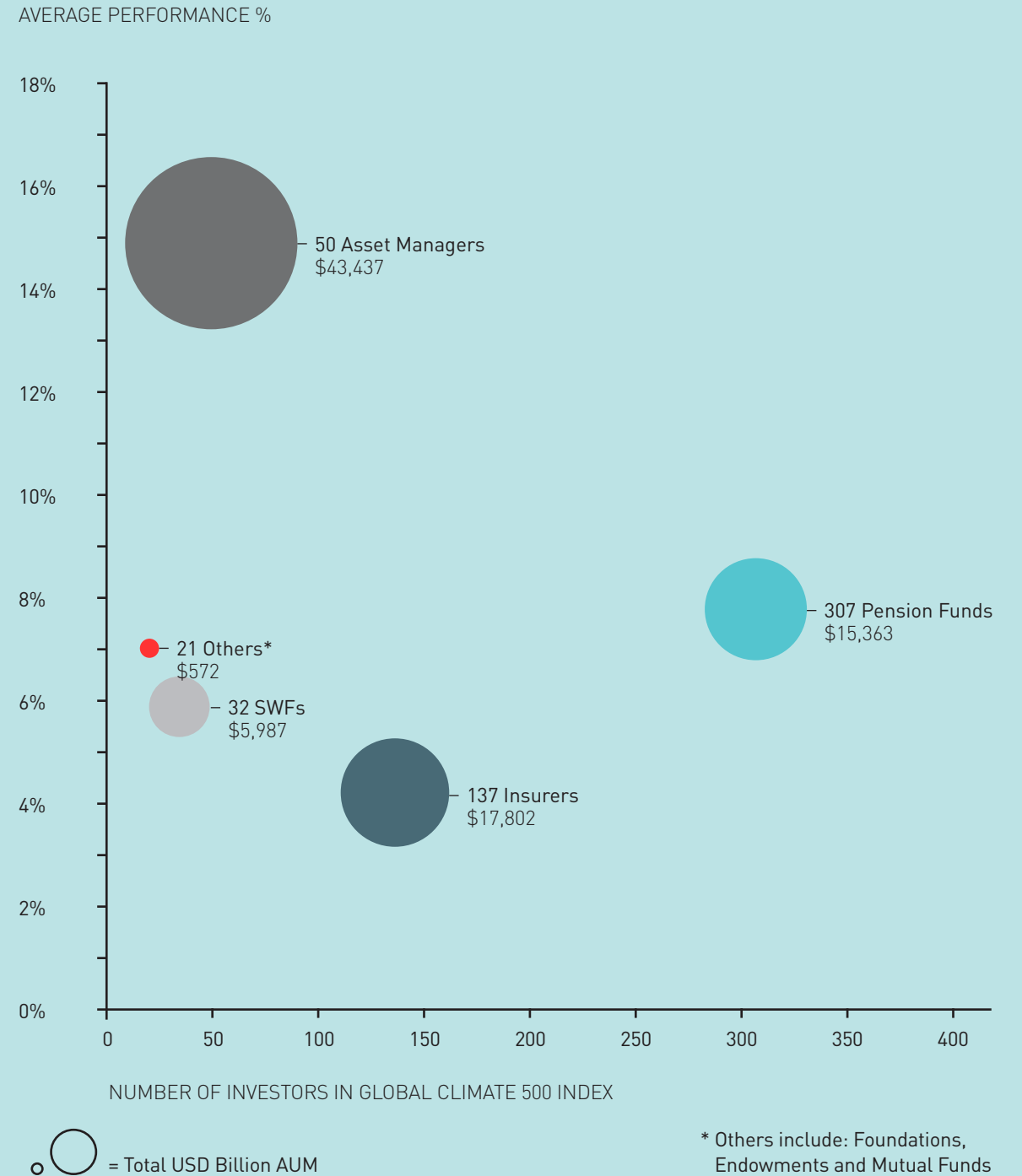
Further information on the methodology can be found in the appendix.

THE SCALES HAVE TIPPED – A 60% MAJORITY OF ASSET OWNERS ARE NOW TAKING ACTION VERSUS 40% IGNORING THE RISKS AND OPPORTUNITIES OF CLIMATE CHANGE.

Climate risk rose further up the investor agenda in 2016. The Paris Climate Agreement came into force in November, including a recognition that financial flows must be aligned with the commitment to keep climate change well below 2°C. Regulatory change is on the agenda, with France implementing a world-first mandatory climate risk disclosure requirement for institutional investors and the Task Force on Climate-related Financial Disclosures delivering its recommendations to the Financial Stability Board, for consideration by the G20 in July this year.



FIGURE 01 / AODP GLOBAL CLIMATE INDEX SECTOR PERFORMANCE



KEY DEVELOPMENTS

The 2017 Global Climate 500 Index covers the Top 500 asset owners globally with \$40 trillion AUM.

Upping the ante:

- 201 X-rated Laggards, a 18% fall in those ignoring climate risk, a clear minority.
- 17 AAA rated Leaders up from 12 last year, the largest AAA gain in AODP Index history.
- Challenger group rated B-BBB sees the most significant increase, up 36% to 34, again a record.
- 112 rated C and above, a 16% rise in those taking tangible action.
- 187 rated D, a 19% rise in those taking first steps acknowledging climate-related financial risk.

AODP's fifth Global Climate 500 Index reveals how the world's biggest asset owners are responding to these signals. For the first time ever, we see a significant majority of asset owners scaling up action to protect their portfolios from climate risk, 299 institutions with funds worth \$27 trillion representing 60% of asset owners and 70% of Index AUM. Major institutions are leading the way: TIAA, the \$915 billion US pension/asset manager hybrid, and AXA, the \$601 billion global insurance giant, have both joined the Leaders group now numbering 34 global institutions.

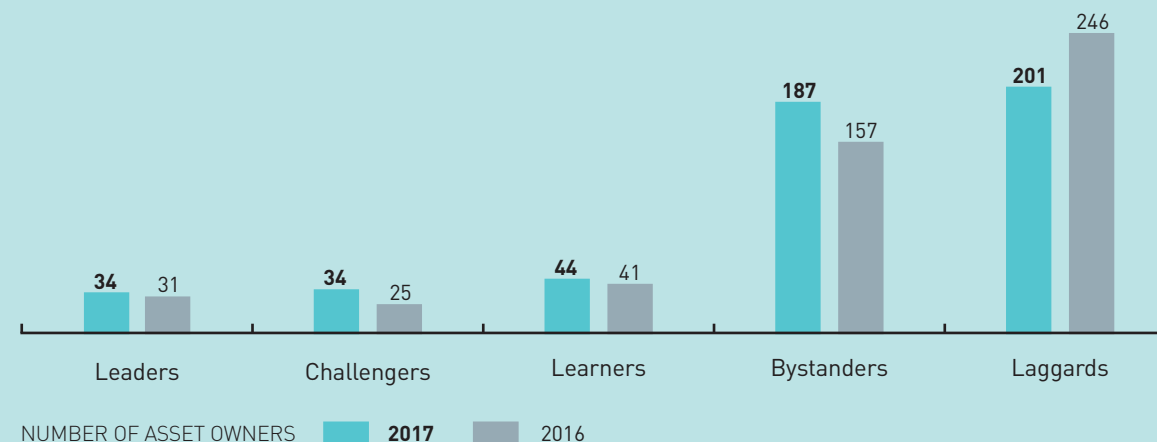
From Bystanders to Leaders, numbers have increased in every category as institutions improve, with the biggest rise in the Challenger group rated B-BBB, which has rapidly improved risk management – a general theme this year.

The number of Laggards has dropped by 19% and now accounts for just 40% of the index, with \$12.4 trillion in AUM. Insurers like Mitsui Mutual and National Mutual in Japan and pension funds like Thrift Savings Plan in the US are putting the financial future of customers at risk by failing to acknowledge the risks and opportunities afforded by the low carbon transition.

Nearly one in five asset owners now has staff focused on integrating climate risk into their investments, a 33% increase from last year. Two in five (42%) now incorporate climate change into their policy frameworks, almost twice as many as last year. 13% of asset owners now calculate portfolio carbon emissions, up from 10%, however assessing the risk of stranded assets is still quite an advanced tool used by only 6% of the Index, mostly in the Leaders group.

Oceania and Europe are the most progressive regions, providing the ten best performing countries. In eight of these – Australia, New Zealand, the Netherlands, Ireland and all of Scandinavia – every fund is taking some action on climate risk.

FIGURE 02 / NUMBER OF ASSET OWNERS BY RATING GROUPS



The world's two biggest economies, the US and China, are among the worst performers, although the US is highly polarised with some important Leaders. In China, Laggards make up 67% of asset owners with investments worth \$2.6 trillion – over 80% of AUM. While China has championed green finance at the G20 and has ambitious targets to boost renewables, a lack of transparency prevents us identifying increased low-carbon investment by its institutions.

In the US 63% of asset owners with \$4.5 trillion of investments are ignoring climate change. The US leads in low carbon investment in absolute terms: green investments disclosed by asset owners doubled to \$55bn, surging past the \$47bn of the Netherlands, last year's top performer, yet this only represents 0.5% of total US AUM, compared to the 3.1% average of Dutch investors. Across the Index low carbon investment has improved 68% to \$203 billion yet still only represents 0.5% of index AUM.

In the US, President Trump's first 100 days have seen plans to reverse much action on tackling climate change. However, with strong opposition from influential states such as California and New York, it remains to be seen what effect federal action will have on companies and investors. Leading investors made a conscious decision years ago that lack of policy or policy reversal was in itself a risk to be managed and only increased their need to grow the size of their clean asset base as a hedge against a climate acceleration scenario.

Asset owners in the US control \$10.3 trillion, a quarter of the Index. If more follow the lead set by peers in Europe, Australia and New Zealand and embrace climate-aware investing, they can radically advance the global transition to a low-carbon economy.

HIGHLIGHTS

The new 2017 Global Climate Index for Asset Managers covers the top 50 asset managers globally with \$43 trillion AUM.

- Two Leaders rated A or above, both European.
- Only three X rated Laggards – just 6% of the Index – far greater recognition of climate risk than asset owners.
- Challengers, rated BBB-B, account for 16% of the Index.
- 46% are taking tangible action on climate-related investment risks and opportunities, rated C or above.
- 24 rated D, just under half the Index (48%), are taking first steps to acknowledge climate related financial risk.

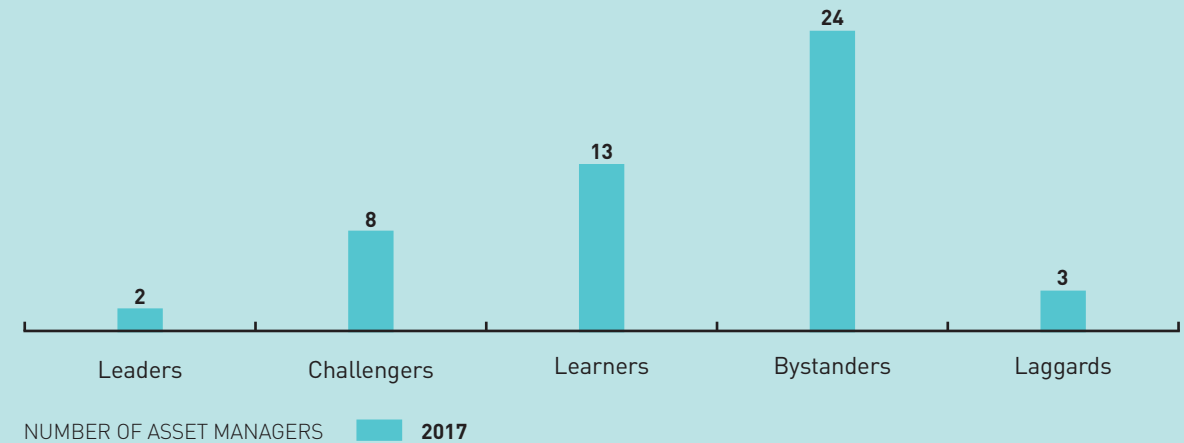
Nearly half of Asset Managers are taking tangible action to manage the risks and opportunities posed by climate change.

AODP's first ever Global Climate Index for Asset Managers shows the world's top 50 asset managers are well ahead of their asset owner clients in their approach to managing the financial impact of climate change on investment portfolios.

Nearly half of rated asset managers are taking tangible action to manage the risks and opportunities posed by climate change, compared to just 23% of asset owners. An even starker comparison is the proportion of Laggards – only 6% fail to disclose action compared with 40% of asset owners. However, asset owners are ahead in leading the way on climate risk, with 7% in the Leaders group versus 4% of asset managers.

Interestingly, manager subsidiaries of asset owners are the most progressive, accounting for nine of the top ten in the Index, in some cases surpassing their parent in the ratings.

FIGURE 03 / NUMBER OF ASSET MANAGERS BY RATING GROUP



The asset management sector is highly concentrated. The top 50 firms manage \$43 trillion, over 70% of global assets under management, and are concentrated in just 10 countries with US firms dominating.

Europe is way ahead. It accounts for the top six countries and the ten highest rated asset managers. The Netherlands is the leading country with its \$441bn APG Asset Management the only institution to earn a AAA rating. The \$1,140bn Legal & General Investment Management comes second, rated AA, one of five UK asset managers in the top 10.

The US accounts for 27 of the 50 asset managers and 70% of funds under management (\$30 trillion). However, it is way behind on tackling climate risk. Its best performers are the \$1,252bn Goldman Sachs Asset Management and \$4,645bn Blackrock, two of six C-rated funds. Another 18, rated D, are only taking the first steps, including \$3,500bn Vanguard. It accounts for the only three X-rated institutions taking no action, including \$2,060bn Fidelity Investments.

Asia Pacific's top performer, Australia's Macquarie Bank, only rates a D, a surprising contrast with the average B scored by its asset owners. This is a cause for concern given its impending acquisition of the UK's Green Investment Bank.

There's fast pace of change being seen in the market. Research was completed in early 2017, so any recent changes will not be incorporated – updates have already been noted in policy and disclosure for a few participants, more are sure to follow throughout 2017.

CLIMATE CHANGE IS NOW A MAINSTREAM CONCERN THROUGH THE INVESTMENT COMMUNITY, AND ACTIVITY IS GATHERING UNSTOPPABLE MOMENTUM.

CONCLUSIONS

Climate change is now a mainstream concern throughout the investment community, and activity is gathering unstoppable momentum. A 60% majority of asset owners recognise the financial risks – and opportunities – of climate change, and are taking action, with growing numbers scaling up their activities to achieve A, B and C ratings.

Asset managers are well placed to meet their growing demands. All but three of the top 50 are taking some action, and as a whole they are performing better than asset owners.

As investors prepare for the implementation of disclosure guidelines, the building blocks appear to be in place in the majority of institutions. There is indication of even more advancement to come this year, with many institutions either already underway or preparing to embark on more ambitious actions.

Asset owners and managers that have acted to reduce their exposure to climate risk and increase their investment in the low carbon economy are already seeing this hedging/opportunity strategy paying off.

Pressure will now mount on those resistant asset owners and managers still failing to take and disclose action on climate change. When leading funds around the world are disclosing significant action, it becomes harder to defend doing nothing. As the number of Laggard funds dwindles, their exposure to any market repricing grows significantly higher and a time may be approaching where it will be too late to avoid portfolio losses.



MAJOR ASSET OWNERS ARE INCREASINGLY LEADING THE WAY ON CLIMATE RISK.

- The Leaders – rated A and above – have increased 10% to 34.
- AAA rated asset owners have increased by 42% to 17.
- USA tops total number in the Leaders group with 7, but this represents only 4% of US asset owners in the Index.
- Sweden tops on proportional representation with 40% of their funds in the Leaders category.

Australia's \$7bn Local Government Super reclaims the top ranking from the UK's \$4bn Environment Agency Pension Fund, which reverts to second place in this year's Global Climate 500 Index for Asset Owners. These two funds are world leaders in all three capabilities of governance and strategy, risk management, and disclosure of metrics on portfolio carbon and investment in the low carbon economy, demonstrating even smaller funds can excel at considering the risks and opportunities presented by the transition to a low carbon economy.

Major asset owners are increasingly leading the way on climate risk. Two giants join the Leader group: AA-rated AXA, the \$601 billion French insurer and A-rated US based pension fund and asset manager TIAA (\$915bn). Both funds have risen from a BBB rating as a result of significant improvements in portfolio risk management, which is a general theme this year.

Other large Leaders maintaining their AAA rating include the \$410bn Dutch pension fund ABP and the \$179bn New York Common Retirement fund. Joining them is major Dutch fund, PFZW (\$208bn) up from a AA rating last year, along with our star mover Ilmarinen Mutual Pension Insurance Company, which has leapt from a D rating last year. The \$302bn California Public Employees Retirement System, AustralianSuper (\$78bn) and Sweden's AP2 (\$38bn) all slip from AAA to AA this year. Notable funds joining the AA group are UK insurer Aviva (\$422bn), California State Teachers' Retirement System (\$193bn), and Unilever Pension Funds (\$26bn) – the only corporate pension fund among the prestigious Leaders – all improving from an A rating last year.

TABLE 01 / 2017 AODP GLOBAL CLIMATE 500 LEADERS LEAGUE

2017 RATING	2017 RANK	2017/2016 CHANGE	ASSET OWNER NAME	TYPE	COUNTRY
AAA	1	^ 1	Local Government Super (LGS)	Pension fund	Australia
AAA	2	v 1	The Environment Agency Pension Fund (EAPF)	Pension fund	UK
AAA	3	^ 2	New York State Common Retirement Fund (NYSCRF)	Pension fund	USA
AAA	3	^ 9	First State Super	Pension fund	Australia
AAA	5	v 1	Stichting Pensioenfond ABP (ABP)	Pension fund	Netherlands
AAA	6	^ 12	Pensioenfond Zorg en Welzijn (PFZW)	Pension fund	Netherlands
AAA	7	^ 12	Kommunal Landspensjonskasse Gjensidige Forsikringselskap (KLP)	Pension fund	Norway
AAA	8	v 5	Fjärde AP-Fonden (AP4)	Pension fund	Sweden
AAA	9	^ 214	Ilmarinen Mutual Pension Insurance Company	Pension fund	Finland
AAA	10	^ 69	Elo Mutual Pension Insurance Company	Pension fund	Finland
AAA	11	^ 5	Fonds de Réserve pour les Retraites (FRR)	Sovereign wealth fund	France
AAA	12	v 2	Church Commissioners for England	Endowment	UK
AAA	13	v 7	Pensionskassernes Administration (PKA)	Pension fund	Denmark
AAA	14	v 4	Etablissement de retraite additionnelle de la Fonction Publique (ERAFP)	Pension fund	France
AAA	15	^ 94	New Zealand Superannuation Fund	Sovereign wealth fund	New Zealand
AAA	16	^ 16	Sjunde AP-Fonden (AP7)	Pension fund	Sweden
AAA	17	^ 3	United Nations Joint Staff Pension Fund (UNJSPF)	Pension fund	USA
AA	18	v 11	AustralianSuper	Pension fund	Australia
AA	19	v 4	Wespath Investment Management (Wespath)	Pension fund	USA
AA	19	-	Vision Pooled Superannuation Trust (VPST)	Pension fund	Australia
AA	21	v 7	Bedrijfspensioenfond voor de Landbouw (BPL)	Pension fund	Netherlands
AA	22	^ 9	Unilever Pension Funds	Pension fund	Netherlands
AA	23	^ 17	AXA Group	Insurance company	France
AA	24	v 11	Caisse des Dépôts (CDC)	Sovereign wealth fund	France
AA	25	v 17	Andra AP-Fonden (AP2)	Pension fund	Sweden
AA	26	v 4	Aviva Insurance	Insurance company	UK
AA	27	^ 19	Tredje AP-Fonden (AP3)	Pension fund	Sweden
AA	28	v 19	California Public Employees Retirement System (CalPERS)	Pension fund	USA
AA	29	v 4	California State Teachers' Retirement System (CalSTRS)	Pension fund	USA
A	30	v 1	The Church of England Pensions Board (CEPB)	Pension fund	UK
A	31	v 7	BT Financial Group	Pension fund	Australia
A	32	v 15	University of California Retirement System (UC Regents)	Endowment	USA
A	33	^ 9	TIAA Global Asset Management (TGAM)	Pension fund	USA
A	34	v 13	Victorian Superannuation Fund (VicSuper)	Pension fund	Australia

JOINING THE LEADERSHIP RANKS



This year has seen eight new entrants to the Leaders group, proving it possible for committed companies to make great progress in a single year.

As mentioned above, Finland's Ilmarinen has climbed 214 places up the ranking, gaining a AAA rating and a top 10 ranking for their new policies, improved transparency and leading action on managing the financial risks of climate change within their investment portfolio. Finnish compatriots Elo also gain a top 10 AAA rating for improving across the board, rising from a CC rating last year. New Zealand Superannuation Fund (rated D in 2016) and Sweden's AP7 also joined the AAA elite with significant improvements in risk management.

These funds may have had a climate strategy previously, but are only now disclosing their actions. Greater transparency is likely to build momentum to a low-carbon economy by revealing to Laggards the true level of climate action among their peers.

Global insurer Axa (\$601bn) and Sweden's \$36bn AP3 have both made headway in portfolio risk management to achieve a AA rating, alongside an impressive debut performance by Index newcomer \$6bn Vision Pooled Superannuation Trust of Australia. TIAA progress to an A rating from last year's BBB.



LARGEST LAGGARDS [BY AUM]



- 201 X rated funds, managing \$12 trillion, a 19% fall and significant improvement from 2016.
- Laggards now represent just 40% of the Index.

- The 10 largest Laggards manage \$5 trillion in assets: 13% of the total Index.
- High proportion of oil-state sovereign wealth funds and Asian insurers.

TABLE 02 / 2016 AODP GLOBAL CLIMATE 500 LARGEST LAGGARDS [BY AUM]

ASSET OWNER NAME	COUNTRY	TYPE	AUM USD BILLION
China Investment Corporation	China	Sovereign wealth fund	\$814
SAMA Foreign Holdings (Saudi Arabian Monetary Agency)	Saudi Arabia	Sovereign wealth fund	\$654
Kuwait Investment Authority	Kuwait	Sovereign wealth fund	\$592
SAFE Investment Company	China	Sovereign wealth fund	\$568
Mitsui Mutual Life Insurance	Japan	Insurance company	\$493
Zenkyoren	Japan	Insurance company	\$477
Thrift Savings Plan (TSP)	USA	Pension fund	\$458
China Life Insurance (Group) Company	China	Insurance company	\$445
Hong Kong Monetary Authority	China	Sovereign wealth fund	\$406
Qatar Investment Authority	Qatar	Sovereign wealth fund	\$304
Total			\$5,212
TOTAL X RATED			\$12,508

Nearly a third of total Index value – \$12.4 trillion – is managed by X-rated funds – Laggards who appear to be ignoring climate risk. Ten funds account for \$5.2 trillion of this sum, predominantly sovereign wealth funds from the Middle East and large Chinese and Japanese insurers. The \$814 billion China Investment Corporation is the largest Laggard completely ignoring climate in its investments.

It is encouraging to see that three of last year's top 10 are now taking action and have earned a D rating: the \$792bn Abu Dhabi Investment Authority, \$795bn Japan Post Insurance and the \$611bn Japanese insurer Nippon Life Insurance Company.

These moves are a result of improved disclosure and investment in low carbon and environmentally sustainable assets.

Success stories are Danica Pension, moving from Laggard to a BB-rated Challenger, driven by improvements in governance, policy and climate risk mitigation actions. The UK's Cooperative Pension Scheme and Australia's IOOF move into the Learner ranks at CC and C respectively for similar actions. Another 43 funds advanced to a D rating, with the majority of improvements in policy, voting transparency and becoming a PRI signatory.

2017 LEADERS

2

Asset manager Leaders, both from Europe.

4%

Only 4% of asset managers rate as Leaders versus 7% of asset owners.

Two asset managers make the Leaders group: AAA-rated Dutch APG Asset Management and AA-rated Legal & General Investment Management, with \$441bn and \$1,140bn under management respectively.

APG excels in all three categories – ranking number 1 in Governance & Strategy, Portfolio Climate Risk Management and Targets & Metrics. It is a subsidiary of Dutch pension fund ABP, a longstanding Leader on the Asset Owner Index, rated AAA, and is one of a number of high-performing managers owned by asset owners. Its clients include a number of pension funds in addition to ABP.

Legal & General Investment Management also performs well across all capabilities – ranking second in both Governance & Strategy and Risk Management, and third in Targets & Metrics, outperforming its parent organisation, which rates D in the Asset Owner Index.

This highlights an issue across the industry: a lack of transparency on policy and action at a corporate level, even where climate is acknowledged as a key issue to manage by a subsidiary.

Asset managers lag behind asset owners on climate leadership. APG and L&GIM account for 4% of the Index and 3.7% of Index AUM, whereas the asset owner Leaders account for 7% of the Index and 10.5% of Index AUM.

2017 LAGGARDS

3

X-rated Laggards, all US-based.

6%

Only 6% of asset managers are Laggards vs 40% of asset owners.

Only three firms accounting for just 7% of total index assets under management – a mere \$3.2 trillion – are X-rated Laggards with no evidence of action on climate risk. This is far better than the 40% of asset owners in this category and a welcome sign that the day-to-day management of their investments is being undertaken by an industry seriously considering the financial implications of climate change.

All three Laggard managers are US-based. Fidelity Investments, one of the largest global investment managers with \$2,060bn AUM makes no mention of climate change, responsible investment or ESG in any of its publicly available information.

As a privately owned company, there is very little disclosure and a general lack of transparency regarding its policies and actions as an investor. This may reflect Fidelity's market – nearly two thirds of US asset owners are Laggards, and with 94% of its funds under management sourced from this market there may be little pressure from institutional clients for a more progressive ESG approach.

The other two X-Rated funds are: the \$611bn Affiliated Managers Group (AMG), a partnership of a number of boutique investment managers; and the \$528bn New York Life Investment Management, the asset management subsidiary of New York Life which also rates as a Laggard on our asset owners index. Very little information is available for either manager.

ASSET MANAGER LEADERS

2017 RATING	2017 RANK	ASSET MANAGER NAME	COUNTRY
AAA	1	APG Asset Management	Netherlands
AA	2	Legal & General Investment Management	UK
BBB	3	Aviva Investors	UK
BBB	4	M&G Investments	UK
BBB	5	Schroders Investment Management	UK
BB	6	Allianz Global Investors	Germany
BB	7	Natixis Global Asset Management	France
BB	8	AXA Investment Managers	France
B	9	Deutsche Asset Management	Germany
B	10	HSBC Global Asset Management	UK
CCC	11	UBS Global Asset Management	Switzerland
CC	12	Aegon Asset Management	Netherlands
CC	13	Standard Life Investments	UK
CC	14	BNP Paribas Investment Partners	France
C	15	Goldman Sachs Asset management	USA
C	16	BlackRock Inc	USA
C	17	Aberdeen Asset Management	UK
C	18	J.P. Morgan Asset Management	USA
C	18	Morgan Stanley	USA
C	20	Amundi	France
C	21	PIMCO	USA
C	22	Credit Suisse	Switzerland
C	23	AllianceBernstein	USA
D	24	Dimensional Fund Advisors	USA
D	25	State Street Global Advisors	USA

TABLE 03 / AODP GLOBAL CLIMATE INDEX FOR ASSET MANAGERS

2017 RATING	2017 RANK	ASSET MANAGER NAME	COUNTRY
D	26	Columbia Threadneedle Investments	USA
D	27	Generali Investments Europe	Italy
D	28	RBC Global Asset Management	Canada
D	29	Northern Trust Asset Management	USA
D	30	Franklin Templeton Investments	USA
D	31	Insight Investment	UK
D	32	MFS Investment Management	USA
D	33	Macquarie	Australia
D	34	Sumitomo Mitsui Trust Group	Japan
D	35	BNY Mellon Invest Management, EMEA	USA
D	36	Mellon Capital Management	USA
D	37	T. Rowe Price	USA
D	38	Wellington Management	USA
D	39	Vanguard	USA
D	39	Invesco	USA
D	39	Legg Mason	USA
D	42	Principal Global Investors	USA
D	43	Wells Capital Management	USA
D	44	Federated Investors	USA
D	45	PGIM (formerly Pramerica Investment Management)	USA
D	46	Capital Group	USA
D	46	Nomura Asset Management	Japan
X	48	Fidelity Investments	USA
X	48	Affiliated Managers Group	USA
X	48	New York Life Investment Management	USA

REGIONAL PERFORMANCE

TABLE 04 / REGIONAL LEADERS – ASSET OWNERS

RATING	RANK	REGION	2017		2016		CHANGE IN AVE SCORE
			# ASSET OWNERS	AUM USD BILLION	# ASSET OWNERS	AUM USD BILLION	
CC	1	EMEA	190	\$15,334	190	\$15,426	54%
C	2	Asia Pacific	84	\$12,136	90	\$10,880	27%
D	4	Americas	226	\$12,254	220	\$11,432	32%
Total			500	\$39,725	500	\$37,737	

European countries remain well ahead of the curve in climate risk disclosure.

- Europe is the clear leader on climate risk among asset managers and asset owners.
- The Americas performs worst, with asset owners and managers averaging D in all sub-regions.
- Asia Pacific asset owners perform better than asset managers, in contrast to Europe.

FIGURE 04 / REGIONAL ASSET MANAGER LEADER/LAGGARD PERFORMANCE
PROPORTION OF LAGGARDS

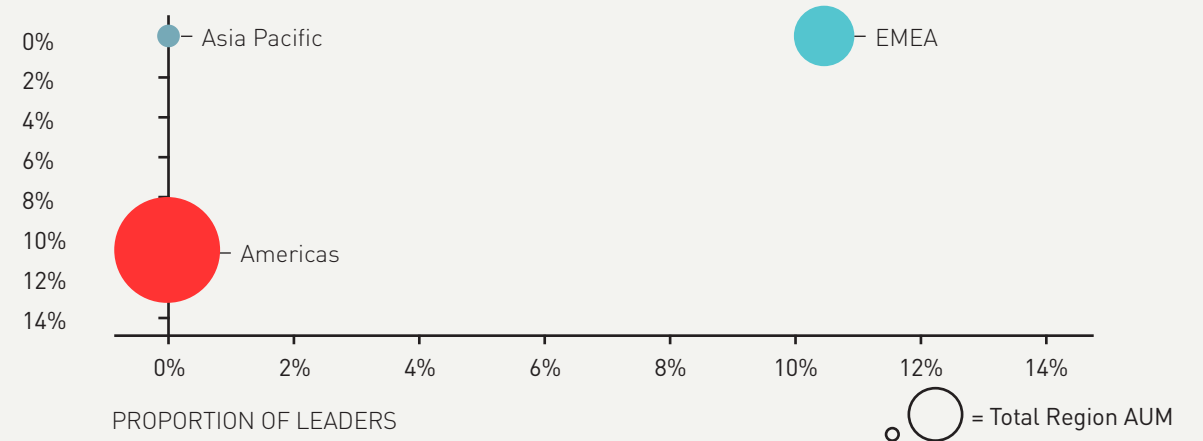


TABLE 05 / REGIONAL LEADERS – ASSET MANAGERS

RATING	RANK	REGION	2017	
			# ASSET MANAGERS	AUM USD BILLION
B	1	EMEA	19	\$11,256
D	2	Asia Pacific	28	\$30,823
D	3	Americas	3	\$1,358
Total			50	\$43,437

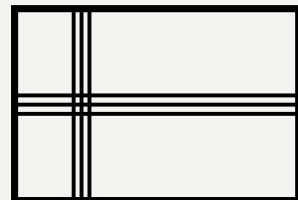
Europe leads the world on climate risk. Scandinavian asset owners continue to dominate the Leaders group and are setting the bar high for disclosure and action on climate risk. The average rating rose from C to CC from C last year (with African and Middle Eastern asset owners remaining at D). Although average scores are rising strongly around the world, EMEA saw by far the fastest improvement with a 54% rise.

Europe's 19 asset managers mirror the success of their asset owner clients, with an average B rating. The entire top 10 asset managers are based in the region, five of which are based in the UK. The top 50 global asset managers are concentrated in just 10 countries, and the leading six from a climate perspective are all European.

Asia Pacific sees a variety of performance. Asset owners in Australia and New Zealand average B compared with an average D across Asia. However, all three asset managers based in this region rate D. Macquarie, the sole Australian investment manager included in this index, will have to dramatically improve its climate credentials, with the impending acquisition of the UK's Green Investment Bank, which has just been given the green light by UK courts¹.

Across all parts of the Americas asset managers and owners average D. Most worryingly, the 27 asset managers in the US manage \$30.5 trillion, 70% of total Index value.

COUNTRY PERFORMANCE



Sweden again tops the country table, with an average BBB.

Scandinavian funds are the most progressive on climate risk. Sweden tops the table again – 40% of its funds are Leaders, up from 30% – with Norway, Finland and Denmark all appearing in the top 10.

France has slipped to 6th place, eclipsed by the rapid rise of New Zealand and Finland, who have moved into 3rd and 4th place from just outside the top ten last year. This is despite an increase in French asset owner Leaders, to 31% from 21% last year. As the landmark Article 173 disclosure requirements for institutional investors came into force in January 2016, French asset owners should improve on their already strong performance in the index. Our research period concluded before the 2016 annual reporting season, so the full effect of this should be seen in the next index, which will assess all asset owners on information prepared under this new requirement.

TABLE 06 / TOP 10 COUNTRIES (BY AVERAGE SCORE), ASSET OWNERS

* P7 countries

RATING	RANK	COUNTRY	% OF ASSET OWNERS		PROPORTION OF AUM		TOTAL # ASSET OWNERS	TOTAL AUM USD BILLIONS	2016 % OF ASSET OWNERS	
			LEADERS	LAGGARDS	LEADERS	LAGGARDS			LEADERS	LAGGARDS
BBB	1	Sweden	40%	0%	37%	0%	10	\$385	30%	0%
BBB	2	Norway	25%	0%	6%	0%	4	\$992	25%	0%
BB	3	New Zealand	50%	0%	46%	0%	2	\$47	0%	50%
BB	4	Finland	33%	0%	30%	0%	6	\$206	0%	14%
B	5	Australia*	21%	0%	18%	0%	29	\$887	18%	3%
B	6	France	31%	15%	42%	3%	13	\$1,961	21%	21%
B	7	Netherlands*	18%	0%	43%	0%	22	\$1,540	17%	11%
CCC	8	Denmark	13%	0%	11%	0%	8	\$317	10%	20%
CC	9	UK*	9%	12%	14%	5%	43	\$3,171	14%	23%
CC	10	Ireland	0%	0%	0%	0%	2	\$51	0%	0%
D	14	Canada*	0%	24%	0%	9%	25	\$1,349	0%	44%
D	15	USA*	4%	63%	17%	43%	183	\$10,382	5%	67%
D	17	Switzerland*	0%	29%	0%	26%	21	\$931	0%	33%
D	21	Japan*	0%	26%	0%	18%	23	\$5,702	0%	58%

France is now a global leader in mandatory climate change related reporting and provides a model for other countries as the G20 prepares to consider the TCFD's recommendations. It will be interesting to watch the influence of these initiatives over the coming year as more countries start to build climate disclosure into existing regulatory frameworks.

Australia (5th) and Netherlands (7th) continue to lead the P7 major pensions markets, where roughly 20% of funds are Leaders. The UK follows (9th), although only 9% of its funds are Leaders, down from 14%. The US has slipped from 9th to 15th place, falling behind Canada (14th). While there are some star performers, only 4% of US based asset owners are Leaders (down from 5%), while the vast majority – 63% worth \$4.5 trillion – are Laggards failing to disclose any climate risk action. Canada, Switzerland (17th) and Japan (25th) have no funds in the Leaders group.

COUNTRY PERFORMANCE



Fossil fuel producing countries consistently rank lowest for climate risk disclosure.

- Three exceptions are Norway, already a leader, and both Azerbaijan and UAE who have improved their positions.
- USA and China, who together control a third of index AUM, continue to disappoint.

TABLE 07 / LARGEST LAGGARD ASSET OWNER COUNTRIES (BY AUM)

RANK	COUNTRY	# ASSET OWNERS	AUM USD BILLION	REGION
1	KUWAIT	3	\$666	
2	SAUDI ARABIA	1	\$654	
3	SINGAPORE	3	\$404	
4	QATAR	1	\$304	
5	RUSSIA	3	\$114	
6	KAZAKHSTAN	1	\$91	
7	IRAN	1	\$62	
8	ARGENTINA	1	\$59	
9	BRUNEI	1	\$30	
10	ALGERIA	1	\$19	
11	ISRAEL	1	\$18	
12	PORTUGAL	1	\$16	
13	EAST TIMOR	1	\$16	
14	INDIA	1	\$14	
15	POLAND	1	\$12	

Kuwait is the largest Laggard country, with no evidence of action to tackle climate risk across its \$666bn of funds. However in April 2016, the heavily oil-dependent gulf state set a renewable energy target of 15% of energy consumption by 2030³. Saudi Arabia comes second with \$654bn, and has also recently announced its revolutionary \$30-50bn National Renewable Energy Programme⁴, joining another fossil fuel giant, the UAE, which in January also announced a \$163bn investment in clean energy⁵. Sustained low oil prices, the falling cost of renewables and the influence of the Paris Agreement have had an historic impact in 2016. We hope these developments will lead more fossil fuel producing countries to follow Norway, Azerbaijan and UAE in taking and disclosing climate action.

A striking change this year is that eight of the top ten countries, controlling \$4.4 trillion, 11% of Index AUM, now have no Laggard funds ignoring climate risk. Last year this was only true of Sweden and Norway. Other major markets have improved significantly, with many asset owners at last starting to address climate risk in their portfolios. The proportion of X-rated Laggards taking no action has fallen sharply from 58% to 26% in Japan; from 44% to 23% in Canada; and from 23% to 12% in the UK.

30% of Japanese asset owners included in the Index are now PRI signatories, the benefit of which can be seen in improved policy, transparency on voting and the range of climate mitigation strategies being employed.

COUNTRY PERFORMANCE



67%
of Chinese funds
are Laggards.

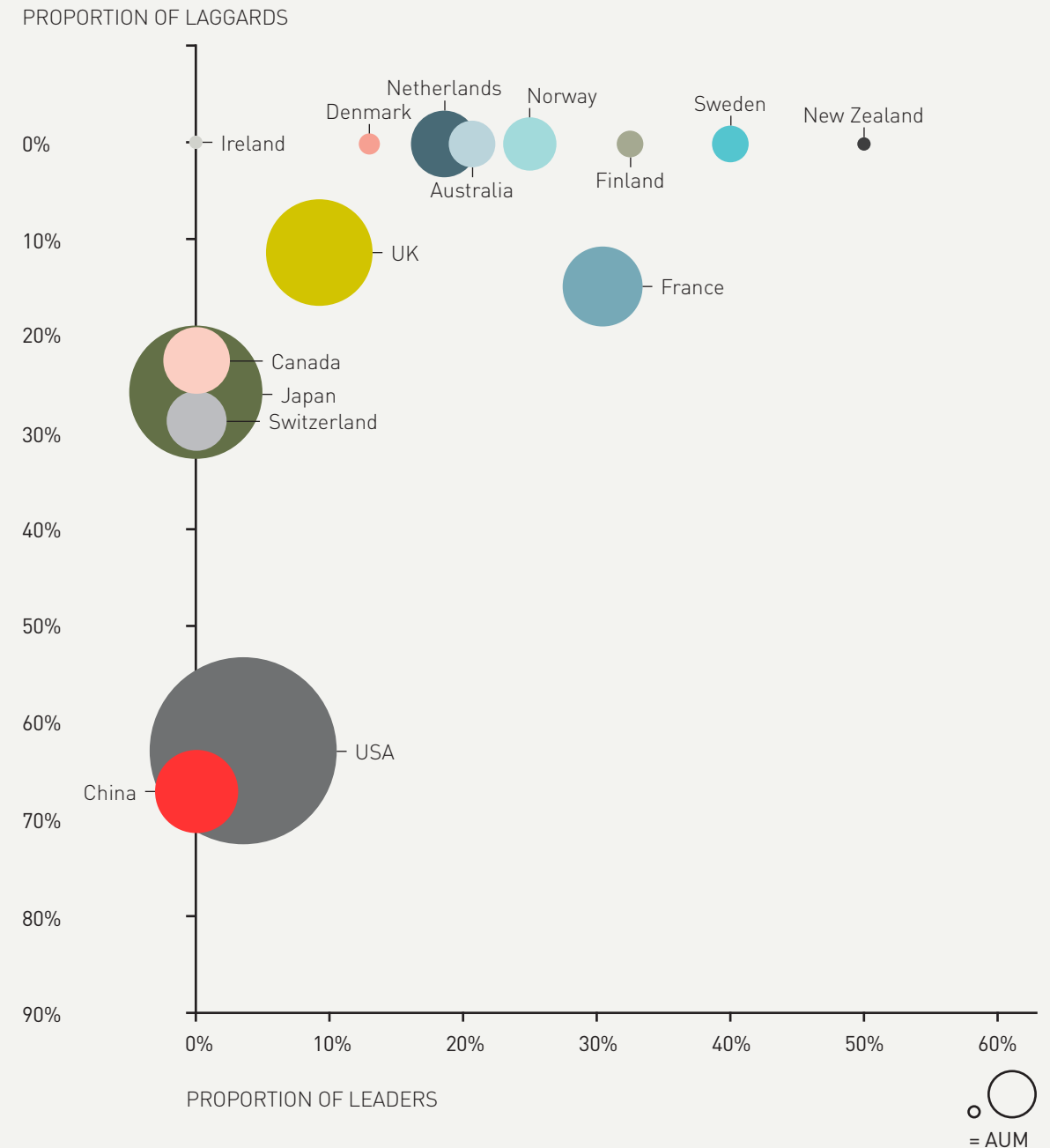
63%
The US has more
than twice as
many Laggards as
any other major
pension market.

The chart to the right illustrates the large proportion of global assets with Laggard owners, and highlights the importance of action by both the USA and China in investing in the global transition to a low carbon economy.

China's \$3.2 trillion is controlled by just nine funds, six of which are Laggards worth \$2.6 trillion. China has championed green finance within the G20, and in January, announced a target of at least \$360bn in renewables investment by 2020², but its investment industry need to improve on disclosure to ensure this global political leadership is evident.

The 183 US funds are worth \$10.4 trillion AUM, representing 26% of total Index AUM. However, it has more than twice as many Laggards as any other major pension market: 63% of all funds, down just 4% on last year, with \$4.5 trillion of investments. If these asset owners follow the lead of institutions across the Atlantic and embrace climate-aware investing they have the capacity to radically change the climate finance landscape.

FIGURE 05 / TOP 10 COUNTRIES LEADER/LAGGARD ASSET OWNER PERFORMANCE



COUNTRY PERFORMANCE



Netherlands leads with the only AAA-rated asset manager.

The Netherlands is the country with the best performance on climate risk, and the only one to achieve an AA rating. APG is the only AAA-rated asset manager while Aegon Asset Management also performs well with a CC rating. Germany ranks second, with Allianz Global Investors rated BB and Deutsche Asset Management rated B.

TABLE 08 / TOP 10 COUNTRIES (BY AVERAGE SCORE), ASSET MANAGERS

RATING	RANK	COUNTRY	% OF ASSET MANAGERS		PROPORTION OF AUM		TOTAL # ASSET MANAGERS	TOTAL AUM USD BILLIONS
			LEADERS	LAGGARDS	LEADERS	LAGGARDS		
AA	1	Netherlands	50%	0%	54%	0%	2	\$819
BBB	2	Germany	0%	0%	0%	0%	2	\$1,329
BB	3	UK	13%	0%	26%	0%	8	\$4,305
CCC	4	France	0%	0%	0%	0%	4	\$3,329
CC	5	Switzerland	0%	0%	0%	0%	2	\$1,005
D	6	Italy	0%	0%	0%	0%	1	\$468
D	7	Canada	0%	0%	0%	0%	1	\$292
D	8	USA	0%	11%	0%	10%	27	\$30,531
D	9	Australia	0%	0%	0%	0%	1	\$367
D	10	Japan	0%	0%	0%	0%	2	\$991
Grand Total			4%	6%	4%	7%	50	\$43,437

The UK, managing 10% of index AUM, comes third and is poised to leap to a Leader position: three of its eight funds are in a strong Challenger position, rated BBB: Aviva Investors, M&G Investors (Prudential's asset management arm) and Schroders and all perform very well across all three capabilities. France, where four big funds manage 8% of Index AUM, comes fourth.

US asset managers account for more than half the Index and 70% of investments. Their six best performers, managing \$9.6 trillion, only rate C, including Blackrock, the world's largest asset manager globally, with \$4,645bn AUM, Goldman Sachs Asset Management with \$1,252bn and JP Morgan Asset Management with \$1,723bn.

All three perform fairly in Governance & Strategy and Risk Management, however only Blackrock lifts from a bottom place in disclosure of Metrics & Targets. The last category, quantification of the extent of low carbon investments, is an area where there is little transparency industry-wide.

Another 18 asset managers, rated D, are only taking the first steps including \$3,500bn Vanguard, \$2,245bn State Street and \$1,625bn BNY Mellon Investment Management.

CAPABILITIES REVIEW

The survey comprises 37 questions covering the following three key areas assessing the asset owner's capability in managing portfolio climate risk. The survey has been remapped this year to align to the FSB TCFD's proposed framework for disclosure, to assist asset owners in assessing their readiness for any forthcoming reporting requirements.

GOVERNANCE & STRATEGY

- Organisation structure and approach it uses to oversee climate risk objectives.
- Degree of integration of climate risk principles in the organisation's policies and processes.



PORTFOLIO RISK MANAGEMENT

- Variety and effectiveness of tools and approaches used to evaluate and manage climate change related financial risks and opportunities. This includes engagement, voting practices, and portfolio management tools.



METRICS & TARGETS

- Key metrics used to measure, monitor and compare portfolio climate risk management performance, including the value asset owners have invested in low carbon assets.



CAPABILITIES REVIEW

TABLE 09 / ASSET OWNER CAPABILITY LEADERS

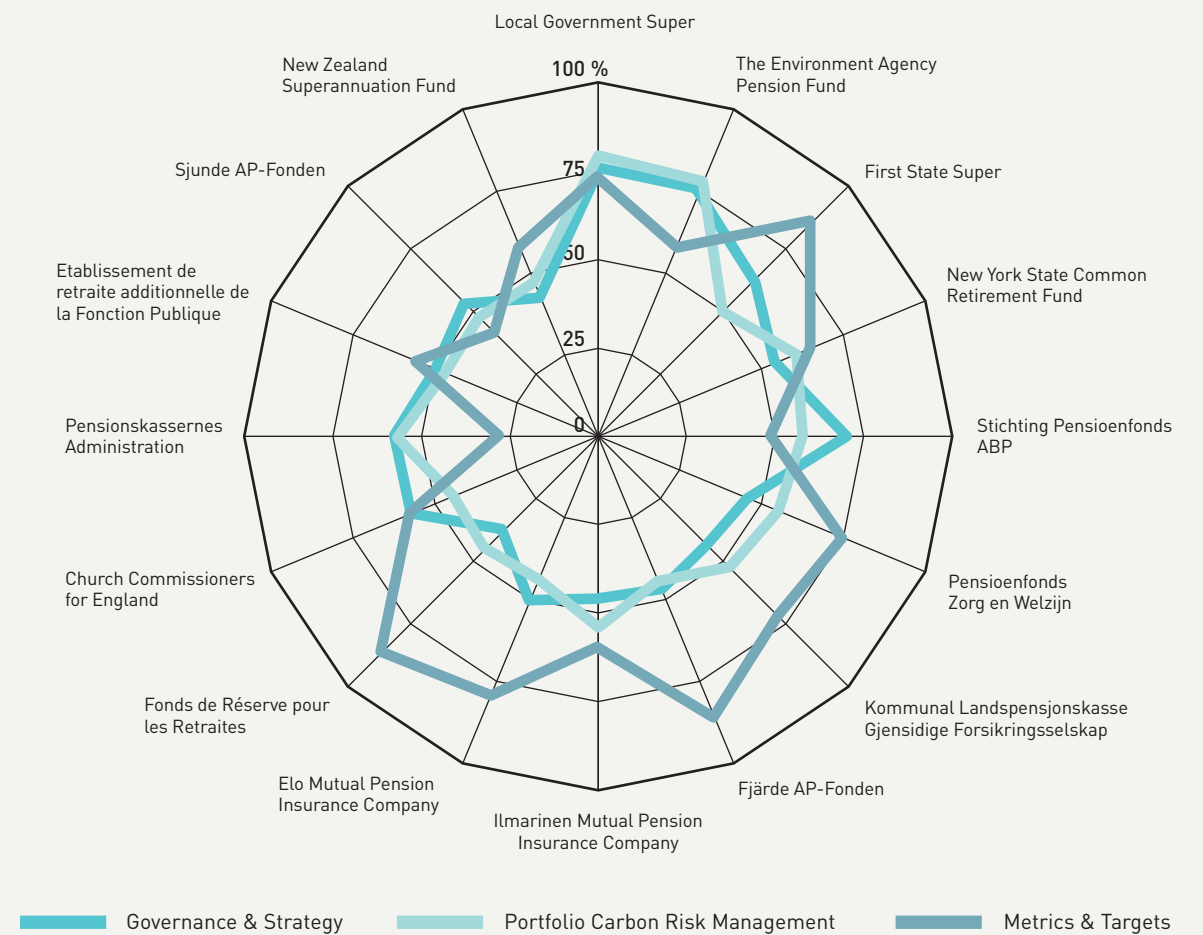
RANKING	GOVERNANCE & STRATEGY	RANKING	PORTFOLIO CARBON RISK MANAGEMENT	RANKING	METRICS & TARGETS
1	The Environment Agency Pension Fund	1	Local Government Super	1	First State Super
2	Local Government Super	2	The Environment Agency Pension Fund	1	Fjärde AP-Fonden
3	Stichting Pensioenfonds ABP	3	New York State Common Retirement Fund	1	Fonds de Réserve pour les Retraites
4	Aviva Insurance	4	California State Teachers' Retirement System	1	Tredje AP-Fonden
5	Wespath Investment Management	5	Stichting Pensioenfonds ABP	5	Vision Pooled Superannuation Trust
6	First State Super	6	Pensionskassernes Administration	6	Elo Mutual Pension Insurance Company
7	Church Commissioners for England	7	Pensioenfonds Zorg en Welzijn	7	Pensioenfonds Zorg en Welzijn
8	Pensionskassernes Administration	8	Unilever Pension Funds	8	Local Government Super
8	Unilever Pension Funds	8	Ilmarinen Mutual Pension Insurance Company	8	Kommunal Landspensjonskasse Gjensidige Forsikringssselskap
10	New York State Common Retirement Fund	10	Wespath Investment Management	10	New York State Common Retirement Fund

Local Government Super and Environment Agency Pension Fund continue their tussle over top spot for two of the three capabilities assessed. Governance & Strategy and Risk Management have seen both these funds in the top two for the last two years. Aviva, First State Super, Unilever and PKA have all notably improved their performance on Governance & Strategy.

Risk Management practices have improved amongst the leadership group, with exceptionally strong performance by Ilmarinen. Techniques are evolving and many more asset owners are developing their capabilities in this area. Seven of the top ten in this category are new this year.

25% of asset owners are now investing in low carbon assets such as green bonds and low carbon indices, a 58% increase from last year. While not framed as a specific hedge strategy (only 2% disclose using low carbon as a active hedging strategy even though others have sought out clean opportunities, almost instinctively as a way to offset their high carbon exposures), investment in these areas diversifies a fund away from high carbon, the full value of which will remain opaque until more advanced methods of base case scenario analysis and risk pricing of carbon at the portfolio level become more widespread. The use of screens and exclusion criteria are also rapidly gaining favour.

FIGURE 06 / ASSET OWNER AAA LEADERS CAPABILITIES



The Metrics & Targets capability has also seen a big change this year. This is a keen area to watch as disclosure continues to improve. What we look for here is identification and quantification of both portfolio emissions and low carbon investments. This should enhance even further, as responsible investment moves from a qualitative to a more quantitative disclosure. Of the top 10 performance, strong movers this year were PFZW, Elo and NY State Common Retirement Fund.

The chart above demonstrates the performance of the AAA rated Leaders across the three capabilities. While the first two capabilities are showing greater consistency amongst the Leaders, there are a few funds who have outperformed in the Metrics capability: FRR, AP4, First State Super and Elo.

CAPABILITIES REVIEW

TABLE 10 / ASSET MANAGER CAPABILITY LEADERS

RANKING	GOVERNANCE & STRATEGY	RANKING	PORTFOLIO CARBON RISK MANAGEMENT	RANKING	METRICS & TARGETS
1	APG Asset Management	1	APG Asset Management	1	M&G Investments
2	Legal & General Investment Management	2	Legal & General Investment Management	1	APG Asset Management
3	Aviva Investors	3	Schroders Investment Management	3	Legal & General Investment Management
4	HSBC Global Asset Management	4	Aviva Investors	4	Natixis Global Asset Management
5	Deutsche Asset Management	5	AXA Investment Managers	4	Dimensional Fund Advisors
6	Allianz Global Investors	6	Allianz Global Investors	6	Allianz Global Investors
7	Schroders Investment Management	7	M&G Investments	7	BNP Paribas Investment Partners
8	Standard Life Investments	8	Aegon Asset Management	8	AXA Investment Managers
9	Goldman Sachs Asset management	9	UBS Global Asset Management	9	Aviva Investors
10	BNP Paribas Investment Partners	10	Deutsche Asset Management	9	Deutsche Asset Management

European managers dominate the capabilities performance rankings, with APG Asset Management taking top place in two of the three categories, and second place in Metrics & Targets.

FIGURE 07 / TOP 10 ASSET MANAGERS CAPABILITIES



Asset managers generally perform strongest in Governance & Strategy, and average a score three times that of asset owners, and indicates many are starting to equip their organisations to address the implications of climate change on their investments. Particularly strong areas are incorporating climate change issues into policy framework, including a focus on stewardship and engagement approach.

Risk Management also scores strongly, and again is double that of asset owners in this capability. Key areas here include voting policy/activity and the range of climate risk mitigation approaches used.

Metrics & Targets is the only capability area where the two groups perform relatively similarly.

34% of asset managers invest in low carbon assets, however with only \$95bn quantified, transparency on how much is invested lags asset owners, 25% of whom disclose \$203bn. Its difficult to draw conclusions on how much capital is being directed towards the low carbon economy without this metric being more reported, and its unclear whether investors are even able to identify this within their portfolios. It will be interesting to watch how this develops as asset owners become more sophisticated in this area and seek out managers with a strong capability for managing a low-carbon tilted portfolio.

GOVERNANCE & STRATEGY

INTEGRATING CLIMATE RISK

82%

Increase in the number of asset owners integrating climate change into their policy framework.

3X

Increase in the number of Bystander asset owners with a role or team looking at financial considerations of climate risk in investments.

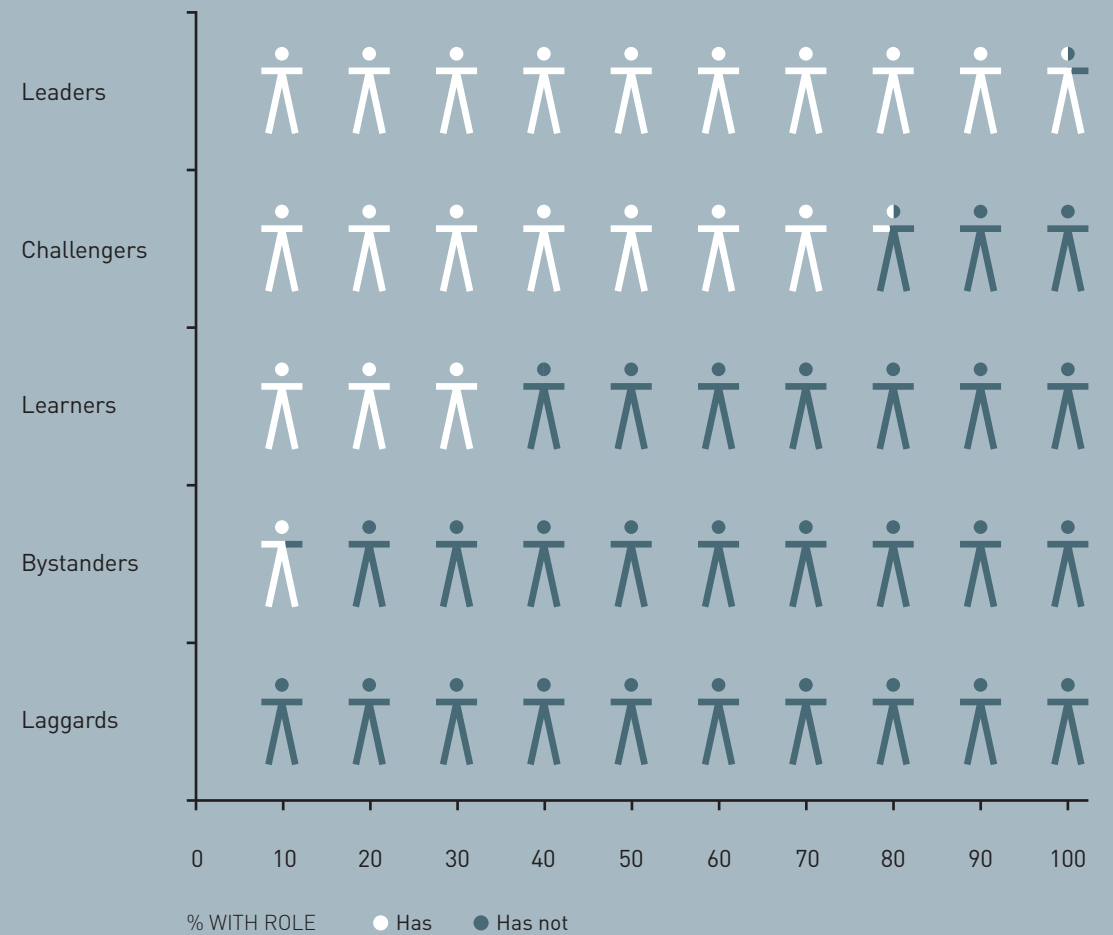
1/3

increase in the number of asset owners with a role or team responsible for including climate considerations in the investment process, increasing from 67 to 89.

42% of asset owners now incorporate climate change into their policy framework.

This year has seen a marked rise in asset owners integrating climate change into their policy frameworks. 42% of the Index now do this in some form, an increase from just 23% last year. This is the shift we have been waiting to see, and comes as a growing number of institutions take an ESG and Responsible Investment approach. While only 20% of asset owners have a dedicated climate change policy, either standalone or as a dedicated section within an ESG/RI policy, a further 20% of funds have implemented a broad ESG policy which covers climate change generally.

FIGURE 08 / PROPORTION OF ASSET OWNERS WITH STAFF WHO INTEGRATE FINANCIAL IMPACT OF CLIMATE CHANGE INTO THE INVESTMENT PROCESS



In an indication of more strategic approach to managing the risks and opportunities presented by the low carbon transition, 73 asset owners (15%) are now incorporating climate risk factors into their asset manager selection process, a 30% increase. 20% of asset owners are now embedding climate change risk management into asset manager agreements, up from 12% last year. More than half this group refer to their climate or ESG policy. However, a move towards greater mandate length is still elusive – only a handful of asset owners are currently doing this.

Another policy trend is guidance on how investee companies are engaged on climate change issues. 15% of asset owners now include this, up from 12% last year, a 25% increase.

All but one of the 34 Leaders (97%) have staff dedicated to integrating climate risk into their investment approach, compared with just 18% of all Index participants. The Challengers are fast closing the gap on Leaders – 83% of this group now have this function – up from 75% last year. Even the D rated Bystanders have started to create these roles – a sure sign this is becoming a mainstream approach.

GOVERNANCE & STRATEGY

INTEGRATING CLIMATE RISK

36%

of asset managers have a standalone climate change policy and/or a dedicated section in ESG/RI policy.

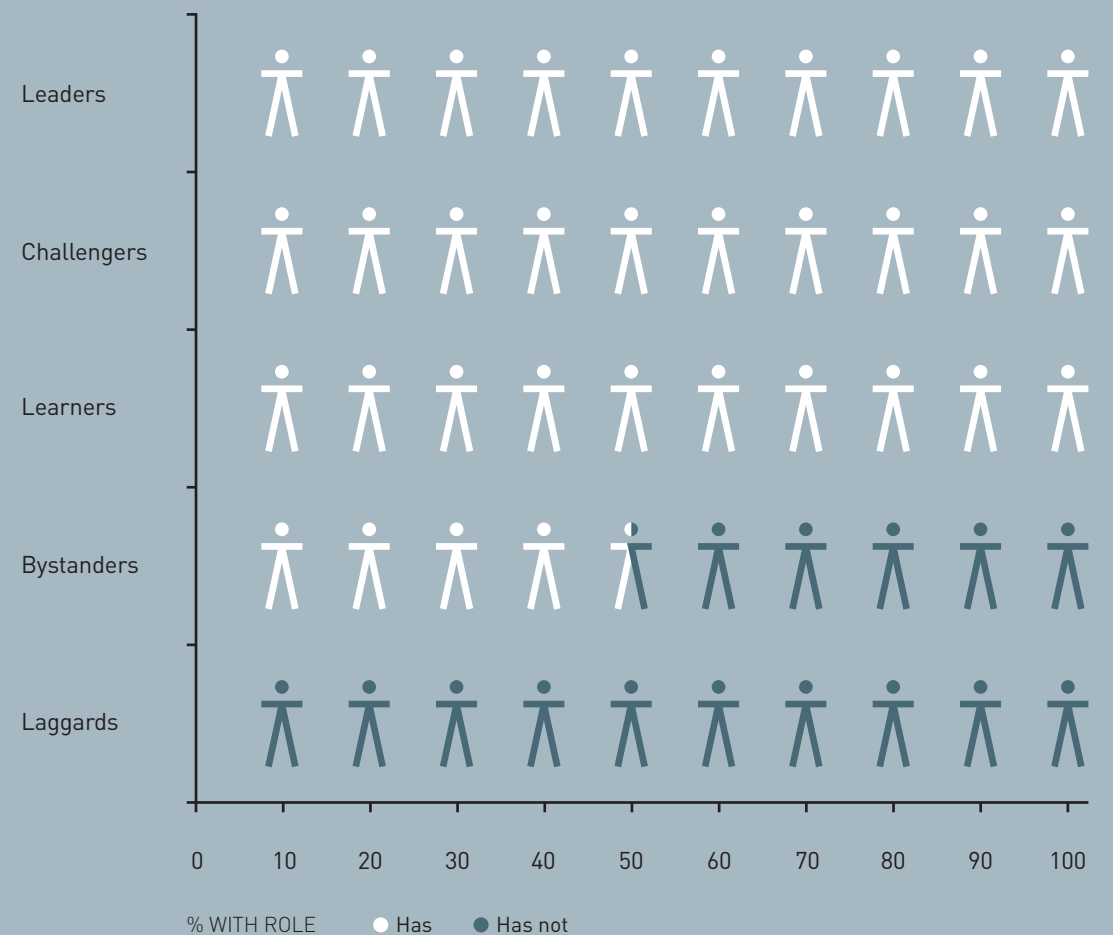
68%

of asset managers have a role or team responsible for including climate considerations in the investment process.

90% of asset managers incorporate climate change into their policy framework.

Compared with just 41% identified within their clients.

FIGURE 09 / PROPORTION OF ASSET MANAGERS WITH STAFF WHO INTEGRATE FINANCIAL IMPACT OF CLIMATE CHANGE INTO THE INVESTMENT PROCESS



36% of asset managers have a specific policy on climate change, either standalone or as a dedicated section within their ESG or Responsible Investment policy. This exceeds the 20% of asset owners taking this advanced approach. Another 20% of managers have a specific ESG/RI risk assessment incorporated into their broader investment approach. In total, almost all asset managers (90%) have some form of policy, compared with just 41% identified within their clients. This is a reflection of the growing importance of broader responsible investment in the industry, and may be in part driven by asset owners requiring a more sustainable approach to investing, including becoming PRI signatories. This is an exceptionally good sign, indicating asset managers are filling the skills gap inherent in the majority of asset owners.

70% of Asset managers have a voting policy covering environmental issues, with 20 % explicitly stating support for climate change resolutions, usually centred on disclosure and reporting. The other 50% consider climate resolutions on a case by case basis.

68% of asset owners have staff who are responsible for including climate change considerations in the investment decision making. 28% of managers have specific team/role, split evenly between ESG or CIO reporting lines, while a further 36% has this covered as part of the general remit of ESG staff. In total, nearly half of the AODP Index managers have this residing within the risk function, as part of a broader ESG risk assessment of investments.

PORTFOLIO RISK MANAGEMENT

CLIMATE-RELATED SHAREHOLDER RESOLUTIONS

64%

of asset managers support for at least one shareholder resolution on climate change.

16%

of asset owners supported at least one shareholder resolution on climate change (up from 12% last year)

91%

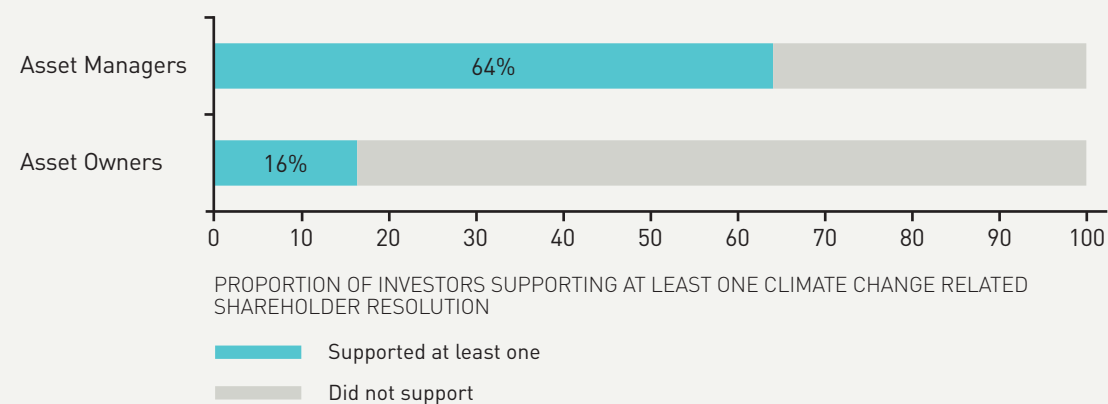
31 of 34 Leaders supported such resolutions, compared with 84% last year.

The number of climate –related shareholder resolutions continues to grow.

The big change in this year’s voting season was the level of management support, particularly on the strategic resilience resolutions championed by the Aiming for A investor coalition, and those following a similar model.

The success of these resolutions is a testament to collaborative engagement which is challenging boards to recognise these issues and take action. US-based asset owners still lag behind their peers – only 14% of US funds voted in support of a climate change related resolution, compared to 48% in Oceania and 21% in Europe.

FIGURE 10 / ASSET MANAGERS VS ASSET OWNERS: VOTING RECORD ON CLIMATE

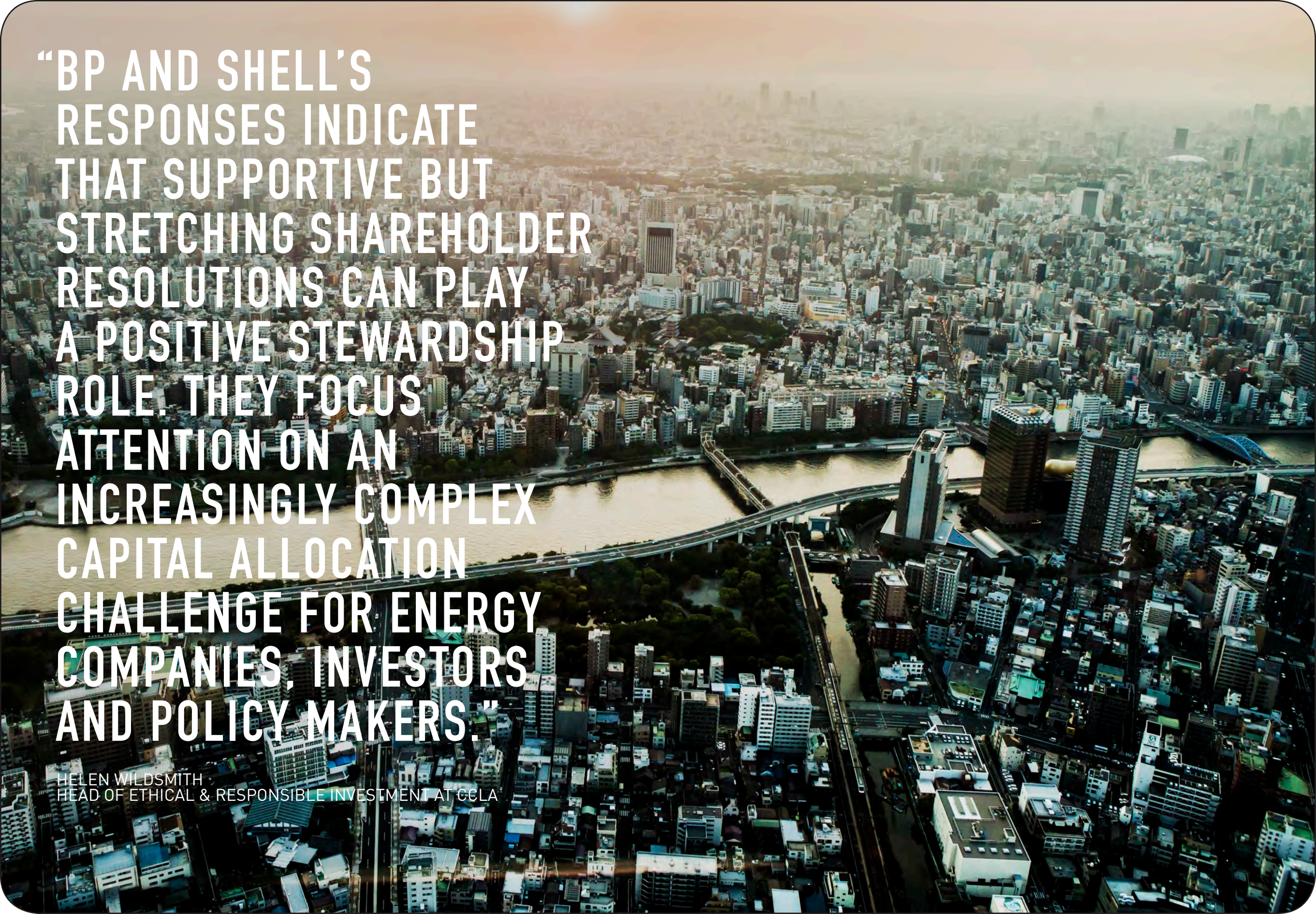


As with asset owners, there’s a significant proportion of asset managers taking positive action on climate change at corporate AGMs.

64% of managers voted in favour of at least one climate change resolution during the 2016 AGM season. Most importantly, 50% of managers were willing to vote against management in the Exxon #12 proposal requiring a report on climate change impact assessment highlighting the growing concern of investors for the impact the shift to a low carbon economy may have on the strategic business plans of these fossil fuel majors.

In contrast, just 13% of asset owners were willing to go against management guidance for this vote (this was 46% vs 11% respectively for the similar Chevron proposal).

However, as uncovered by AODP’s Investor Engagement report⁶, of the three largest asset managers, only State Street was willing to support this resolution in defiance of management recommendation to vote against.

An aerial photograph of a dense urban landscape, likely Tokyo, featuring a wide river with several bridges, numerous high-rise buildings, and a complex network of roads and infrastructure. The scene is captured from a high angle, showing the intricate details of the city's layout.

“BP AND SHELL’S
RESPONSES INDICATE
THAT SUPPORTIVE BUT
STRETCHING SHAREHOLDER
RESOLUTIONS CAN PLAY
A POSITIVE STEWARDSHIP
ROLE. THEY FOCUS
ATTENTION ON AN
INCREASINGLY COMPLEX
CAPITAL ALLOCATION
CHALLENGE FOR ENERGY
COMPANIES, INVESTORS
AND POLICY MAKERS.”

HELEN WILDSMITH
HEAD OF ETHICAL & RESPONSIBLE INVESTMENT AT GCLA

PORTFOLIO RISK MANAGEMENT

STRANDED ASSETS

12%

Six asset managers assess stranded assets exposure for fossil fuel holdings.

6%

Just 30 asset owners measure portfolio-level risk of stranded assets, up from 24 last year.

68%

23 Leaders measure this in some way compared with 45% last year.

While other key factors in managing the financial risks, and opportunities, of climate change have begun to take hold, this is one key area that is still lagging at an overall Index level. Unsurprisingly, it's the Leaders who are taking significant steps here, with a 64% increase in their number who have undertaken this analysis during the past year.

Additionally, a number of disclosers this year have indicated this is either currently underway or on their agenda for the coming year, so we hope to see the results showing in next year's report. Difficulties associated with identification, measurement and cost are a potential cause of this risk assessment not being more widely adopted.

FIGURE 11 / ASSET MANAGERS VS ASSET OWNERS: STRANDED ASSETS ASSESSMENT

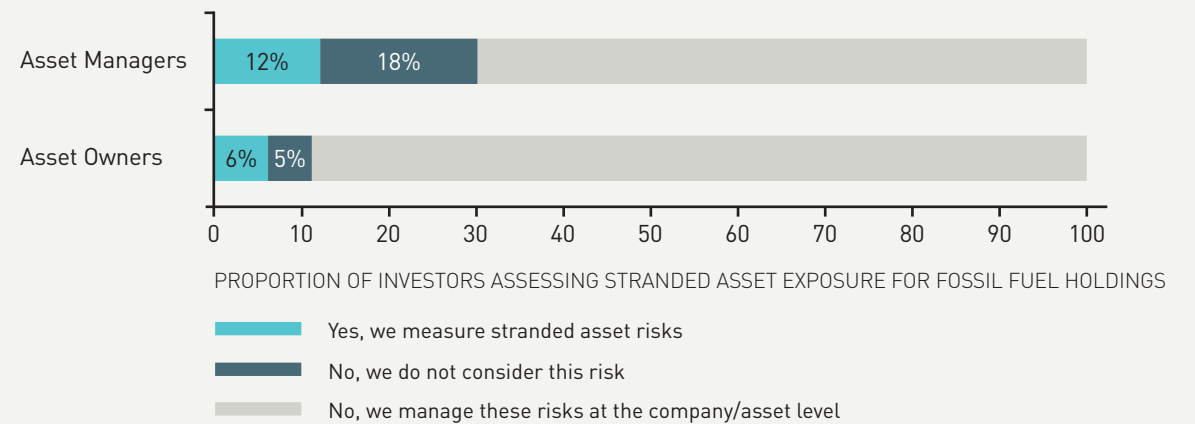
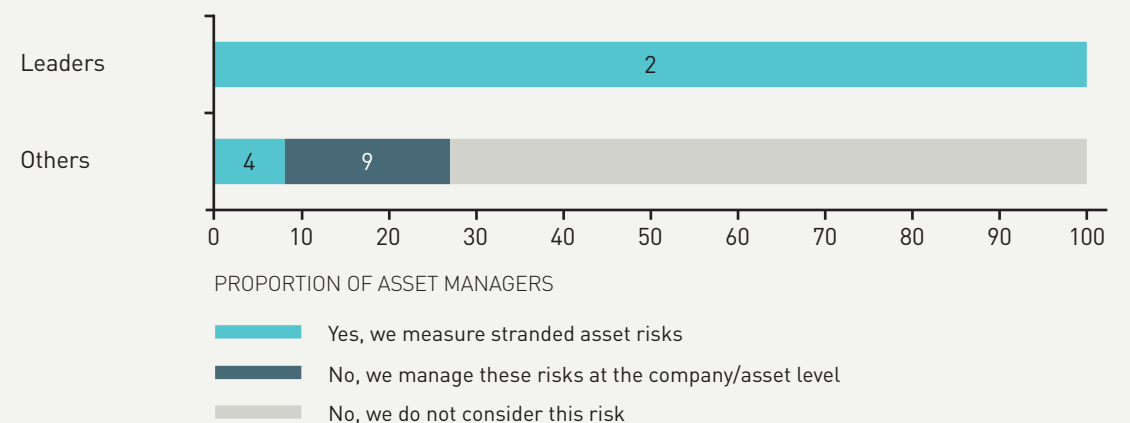


FIGURE 12 / ASSET OWNERS ASSESSING STRANDED ASSET EXPOSURE FOR FOSSIL FUEL HOLDINGS



FIGURE 13 / ASSET MANAGERS ASSESSING STRANDED ASSET EXPOSURE FOR FOSSIL FUEL HOLDINGS



METRICS & TARGETS

PORTFOLIO CARBON EMISSIONS

20%

10 assets managers calculate their portfolio carbon emissions.

13%

66 assets owners calculate their portfolio carbon emissions – a 27% increase from 2016 (10%, 52).

50%

17 Leaders declare an emissions intensity reduction target for next year, almost doubling from last year (9, 29%).

While more asset owners are calculating their portfolio carbon emissions intensity, overall still only 25 asset owners (5%) set an portfolio carbon emissions intensity reduction target, up from 14 (2.8%) last year. Many respondents have identified the need to undertake further analysis before setting such targets, so this number is expected to increase in the near term.

Some Leaders measure portfolio carbon footprint, but don't set reduction targets, with lack of standards and reliability of information often cited as a reason. The TCFD scenario analysis guidelines are likely to increase this significantly as more create bases cases that are more carbon savvy than short term markets.

FIGURE 14 / ASSET MANAGERS VS ASSET OWNERS: PORTFOLIO CARBON EMISSIONS

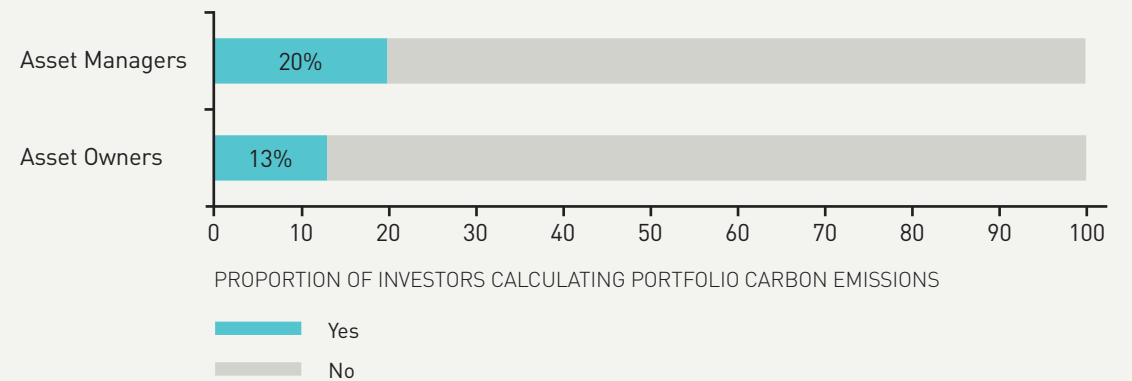


FIGURE 15 / ASSET OWNERS CALCULATING PORTFOLIO CARBON EMISSIONS

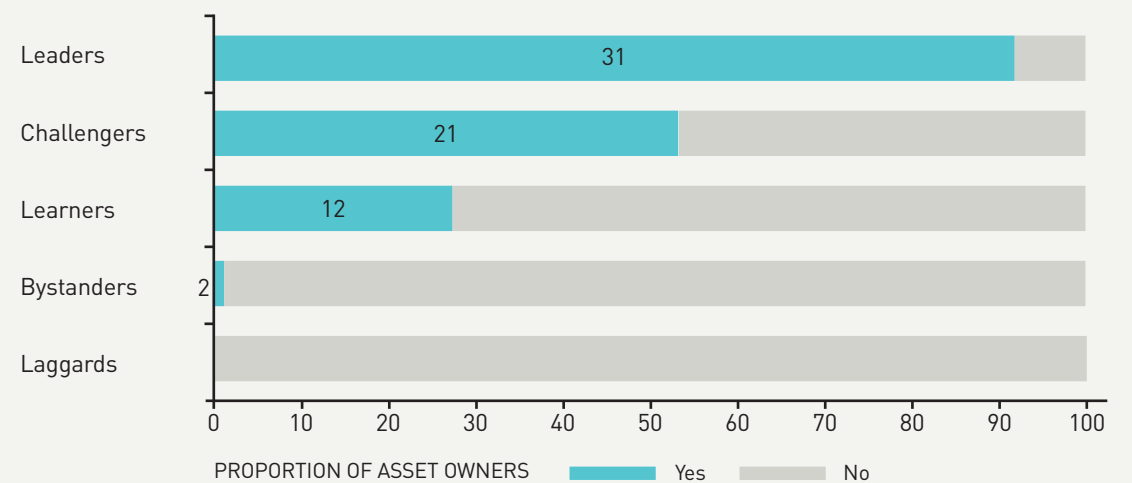
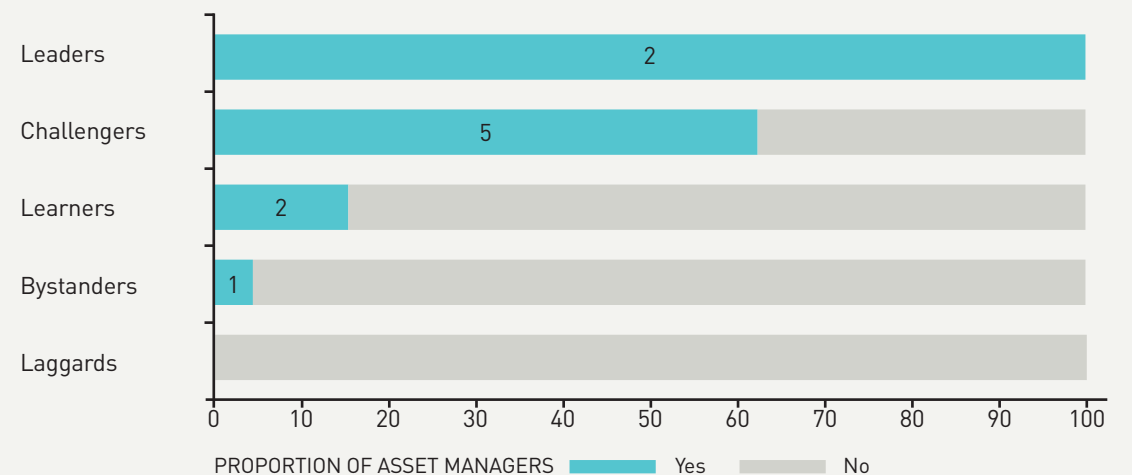


FIGURE 16 / ASSET MANAGERS CALCULATING PORTFOLIO CARBON EMISSIONS



METRICS & TARGETS

LOW CARBON INVESTMENT

26%

The Environment Agency Pension Fund highest ranking asset owner with 26% of AUM invested in low carbon investments. ABP again ranks #1 in absolute terms.

9.4%

APG Investment Management is the top asset manager in both proportion of AUM and absolute terms, with 9.4% and \$41bn.

68%

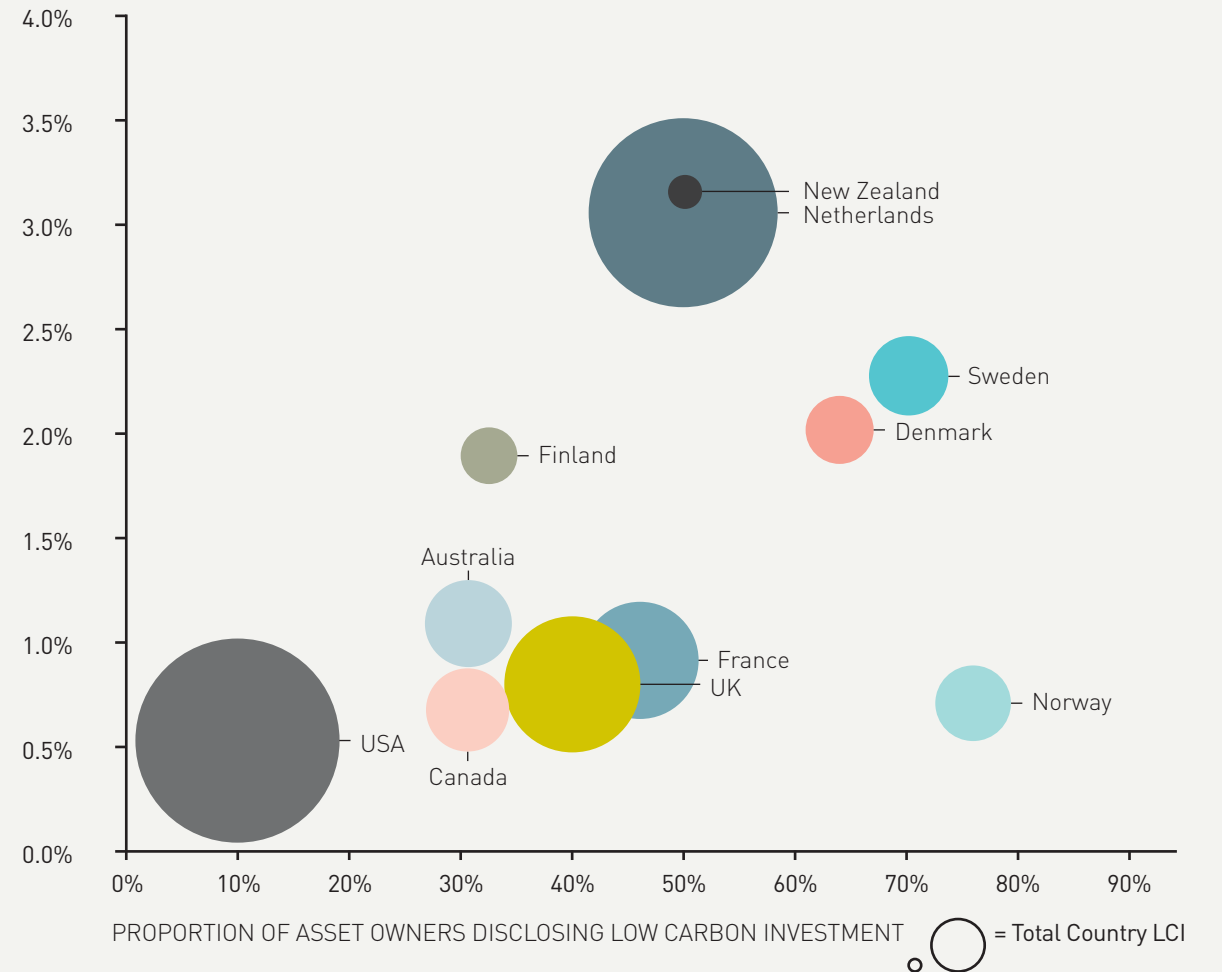
\$203 billion or 0.5% of asset owner Index AUM has been specifically identified as low carbon investments, a 68% increase from last year's \$138bn (last year saw a 63% rise).

This year sees another big increase in low carbon investment, indicating disclosure is improving, more capital is transitioning into the low carbon economy or, more likely, a combination of both. The difficulties of quantifying this persists, even where investments are disclosed, often it is not quantified. A key barrier is a clear methodology for defining which assets qualify as low carbon, across asset classes. Where possible, the Low Carbon Investment (LCI) Registry's Taxonomy of Eligible Investments has been used⁷. The Climate Bonds Initiative continues to develop its Standard and Certification⁸ framework, which provides a useful tool for investors to assess the environmental credibility of their investments.

Only \$95 billion or 0.2% of asset manager Index AUM has been specifically identified as low carbon investments, indicating a lower level of disclosure and quantification by managers. APG Investment Management ranks top on both a proportional and absolute basis, with 9.4% AUM and \$41bn disclosed. BNP Paribas ranks second, investing 3.4% of its total AUM, or \$21bn, in low carbon assets. M&G Investments takes third place.

FIGURE 17 / TOP 10 COUNTRIES FOR LOW CARBON INVESTMENT BY ASSET OWNERS

PROPORTION OF AUM IN LOW CARBON INVESTMENT



On a regional basis, it is clear that European asset managers are much more transparent in quantifying their low carbon investments, making up 98% of the disclosed total. In total, 16 managers invest \$93.3bn, an average of 1.2% AUM. No manager within the Asia Pacific region quantified this.

If US asset owners matched the NZ investment proportion, their LCI would rise to \$327 billion. If all countries were to divert the same percentage, an additional \$1.3 trillion would flow into the low carbon economy.

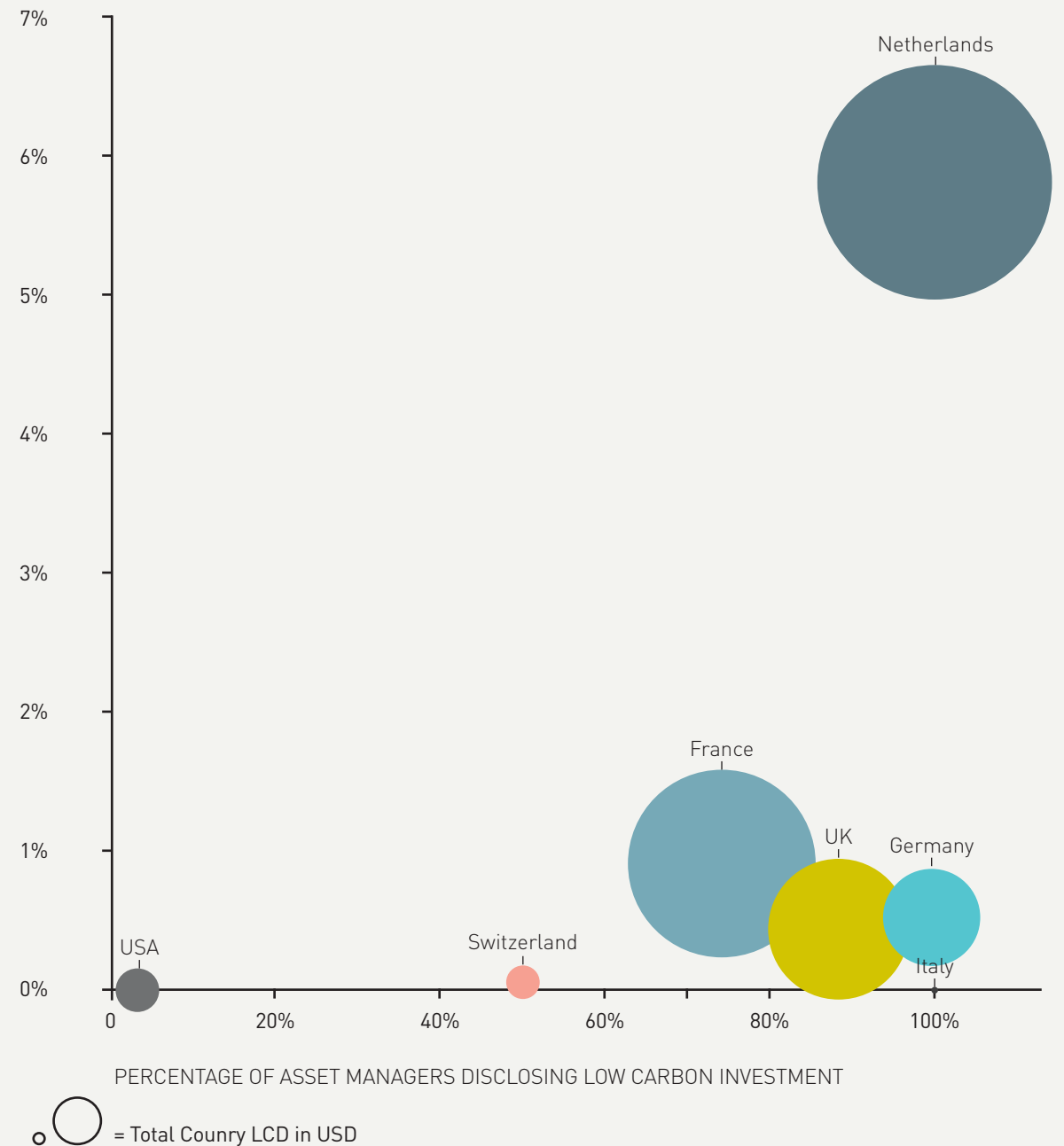
However, New Zealand leads the country table for low carbon investment by asset owners on a proportional basis 3.2% of total NZ Index AUM, while the US comes in top on an absolute basis with an aggregate of \$55 billion invested in low carbon – but this is only 0.5% of total US AUM reported in the Index. In contrast, only one US manager quantifies low carbon investment of \$1.4bn, 0.3% of their portfolio AUM.

THIS YEAR SEES ANOTHER BIG INCREASE IN LOW CARBON INVESTMENT, INDICATING DISCLOSURE IS IMPROVING AND MORE CAPITAL IS TRANSITIONING INTO THE LOW CARBON ECONOMY.



FIGURE 18 / LOW CARBON INVESTMENT BY ASSET MANAGERS (BY COUNTRY)

PROPORTION OF AUM IN LOW CARBON INVESTMENT

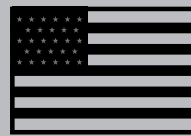


**CLIMATE CHANGE IS NOW
A MAINSTREAM CONCERN
THROUGHOUT THE
INVESTMENT COMMUNITY,
AND ACTIVITY IS GATHERING
UNSTOPPABLE MOMENTUM.
A 60% MAJORITY OF ASSET
OWNERS RECOGNISE THE
FINANCIAL RISKS –
AND OPPORTUNITIES –
OF CLIMATE CHANGE,
AND ARE TAKING ACTION,
WITH GROWING NUMBERS
SCALING UP THEIR ACTIVITIES.**



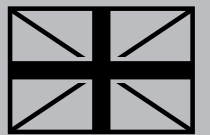
COUNTRY TABLES

TABLE 11 /
USA



2017 RATING	2017 RANK	2017 / 2016 CHANGE	ASSET OWNER NAME
AAA	3	^ 2	New York State Common Retirement Fund (NYSCRF)
AAA	17	^ 3	United Nations Joint Staff Pension Fund (UNJSPF)
AA	19	∨ 4	Wespath Investment Management (Wespath)
AA	28	∨ 19	California Public Employees Retirement System (CalPERS)
AA	29	∨ 4	California State Teachers' Retirement System (CalSTRS)
A	32	∨ 15	University of California Retirement System (UC Regents)
A	33	^ 9	TIAA Global Asset Management (TGAM)
BBB	39	0	William and Flora Hewlett Foundation
BBB	40	∨ 13	Teachers' Retirement System of the City of New York (NYC TRS)
BBB	40	∨ 14	New York City Employees Retirement System (NYCERS)

TABLE 12 /
UK

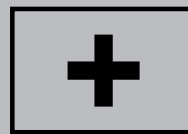


2017 RATING	2017 RANK	2017 / 2016 CHANGE	ASSET OWNER NAME
AAA	2	∨ 1	The Environment Agency Pension Fund
AAA	12	∨ 2	Church Commissioners for England
AA	26	∨ 4	Aviva Insurance
A	30	∨ 1	The Church of England Pensions Board (CEPB)
BBB	38	∨ 4	Strathclyde Pension Fund (SPF)
BBB	43	^ 24	Old Mutual Group
BBB	47	∨ 17	Greater Manchester Pension Fund (GMPF)
BB	54	∨ 21	TPT Retirement Solutions (Formally The Pensions Trust)
BB	55	^ 37	Board of the Pension Protection Fund (PPF)
B	63	^ 25	Standard Life Group

COUNTRY TABLES

TABLE 13 /

SWITZERLAND



2017 RATING	2017 RANK	2017 / 2016 CHANGE	ASSET OWNER NAME
B	67	^ 69	Zurich Insurance Group
CC	83	∨ 23	Oak Foundation
C	104	^ 119	Swiss Federal Pension Fund (PUBLICA)
D	150	^ 21	Pensionskasse SBB (PK SBB)
D	161	^ 96	Pensionskasse Post (Pkpost)
D	165	^ 39	Swiss Re
D	181	∨ 36	Swiss Mobiliar Insurance & Pensions
D	186	^ 6	Helvetia Group
D	213	∨ 55	Compenswiss (Swiss Federal Social Security Funds)
D	218	∨ 94	Pension Fund City of Zurich (PKZH)

TABLE 14 /

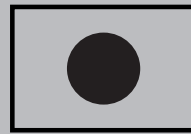
NETHERLANDS



2017 RATING	2017 RANK	2017 / 2016 CHANGE	ASSET OWNER NAME
AAA	5	∨ 1	Stichting Pensioenfonds ABP (ABP)
AAA	6	^ 12	Pensioenfonds Zorg en Welzijn (PFZW)
AA	21	∨ 7	Bedrijfspensioenfonds voor de Landbouw (BPL)
AA	22	^ 9	Unilever Pension Funds
BBB	40	-	Aegon N.V.
BB	49	^ 47	Achmea Holding
CCC	69	^ 80	Bedrijfstakpensioenfonds voor de Bouwnijverheid (bpfBOUW)
CCC	71	∨ 15	Stichting Pensioenfonds PGB
CCC	74	^ 149	Pensioenfonds voor de Detailhandel (BpFD)
CCC	77	^ 146	Pensioenfonds van de Metalektro (PME)

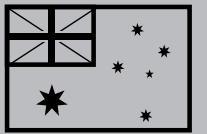
COUNTRY TABLES

TABLE 15 /
JAPAN



2017 RATING	2017 RANK	2017 / 2016 CHANGE	ASSET OWNER NAME
C	97	^ 95	MS&AD Insurance Group
D	113	^ 74	Sompo Japan Nipponkoa Holdings, Inc.
D	146	∨ 13	Dai-ichi Mutual Life Insurance Company
D	149	^ 55	Government Pension Investment Fund (GPIF)
D	176	^ 81	Nippon Life Insurance Company (Nissay)
D	207	^ 50	Organization for Workers' Retirement Allowance Mutual Aid
D	213	^ 44	National Pension Fund Association
D	218	∨ 26	Tokio Marine Holdings, Inc.
D	218	∨ 26	Sumitomo Mitsui Financial Group (SMFG)
D	236	∨ 32	T/D Holdings, Inc.

TABLE 16 /
AUSTRALIA



2017 RATING	2017 RANK	2017 / 2016 CHANGE	ASSET OWNER NAME
AAA	1	^ 1	Local Government Super (LGS)
AAA	3	^ 9	First State Super
AA	18	∨ 11	AustralianSuper
AA	19	-	Vision Pooled Superannuation Trust (VPST)
A	31	∨ 7	BT Financial Group
A	34	∨ 13	Victorian Superannuation Fund (VicSuper)
BBB	35	0	MLC Super Fund
BBB	45	^ 2	CareSuper
BBB	48	^ 9	UniSuper
BB	50	∨ 10	Mercer Super Trust (MST)

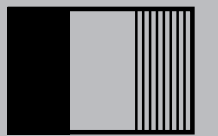
COUNTRY TABLES

TABLE 17 /
CANADA



2017 RATING	2017 RANK	2017 / 2016 CHANGE	ASSET OWNER NAME
B	61	^ 10	OPSEU Pension Trust (OPTrust)
CC	83	^ 66	Manulife Financial
CC	85	^ 64	B.C. Public Service Pension Plan
C	86	^ 106	Industrial Alliance Insurance and Financial Services (IA)
C	89	^ 28	B.C. Teachers Pension Fund
C	89	^ 134	B.C. Municipal Pension Plan (MPP)
C	104	^ 88	Great-West Lifeco Inc. (GWL)
C	106	∨ 31	Canada Pension Plan Investment Board (CPPIB)
C	109	∨ 44	Ontario Teachers Pension Plan (OTPP)
D	141	^ 116	Alberta Heritage Savings Trust Fund (HSTF)

TABLE 18 /
FRANCE



2017 RATING	2017 RANK	2017 / 2016 CHANGE	ASSET OWNER NAME
AAA	11	^ 5	Fonds de Réserve pour les Retraites (FRR)
AAA	14	∨ 4	Etablissement de retraite additionnelle de la Fonction Publique (ERAFP)
AA	23	^ 17	AXA Group
AA	24	∨ 11	Caisse des Dépôts (CDC)
CCC	76	^ 11	CNP Assurances Group
CC	79	^ 125	BPI France (BPI)
C	96	∨ 15	Crédit Agricole Assurances (CAA)
D	129	∨ 57	MAIF
D	207	∨ 94	SCOR Group (SCOR)
D	247	∨ 77	Natixis Insurance Division

COUNTRY TABLES

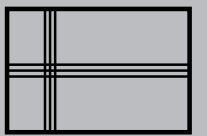
TABLE 19 /

SCANDINAVIA

2017 RATING	2017 RANK	2017 / 2016 CHANGE	ASSET OWNER NAME
AAA	7	^ 12	Kommunal Landspensjonskasse Gjensidige Forsikringsselskap (KLP)
AAA	8	∨ 5	Fjärde AP-Fonden (AP4)
AAA	9	^ 214	Ilmarinen Mutual Pension Insurance Company
AAA	10	^ 69	Elo Mutual Pension Insurance Company
AAA	13	∨ 7	Pensionskassernes Administration (PKA)
AAA	16	^ 16	Sjunde AP-Fonden (AP7)
AA	25	∨ 17	Andra AP-Fonden (AP2)
AA	27	^ 19	Tredje AP-Fonden (AP3)
BBB	36	^ 38	Folksam Group
BBB	36	^ 54	Storebrand ASA

TABLE 20 /

SWEDEN



2017 RATING	2017 RANK	2017 / 2016 CHANGE	ASSET OWNER NAME
AAA	8	∨ 5	Fjärde AP-Fonden (AP4)
AAA	16	^ 16	Sjunde AP-Fonden (AP7)
AA	25	∨ 17	Andra AP-Fonden (AP2)
AA	27	^ 19	Tredje AP-Fonden (AP3)
BBB	36	^ 38	Folksam Group
BB	52	∨ 14	Sjätte AP-Fonden (AP6)
BB	53	∨ 30	AMF
B	60	^ 4	KPA Pension
CCC	70	∨ 18	Första AP-Fonden (AP1)
CCC	78	∨ 16	Alecta

COUNTRY TABLES

TABLE 21 /

DENMARK



2017 RATING	2017 RANK	2017 / 2016 CHANGE	ASSET OWNER NAME
AAA	13	▼ 7	Pensionskassernes Administration (PKA)
BB	59	▲ 198	Danica Pension
B	62	▼ 13	Velux Foundation
B	63	▼ 19	PensionDanmark
D	133	▲ 3	PFA Pension
D	136	▲ 40	Pensionskassen for Magistre & Psykologer (MP Pension)
D	160	▲ 16	Sampension
D	161	▼ 65	Arbejdsmarkedets Tillaegspension (ATP)

TABLE 22 /

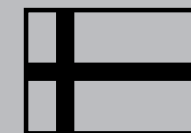
NORWAY



2017 RATING	2017 RANK	2017 / 2016 CHANGE	ASSET OWNER NAME
AAA	7	▲ 12	Kommunal Landspensjonskasse Gjensidige Forsikringsselskap (KLP)
BBB	36	▲ 54	Storebrand ASA
BBB	44	0	Government Pension Fund Global (GPGF)
D	132	▼ 46	Government Pension Fund Norway (GPFN)

TABLE 23 /

FINLAND



2017 RATING	2017 RANK	2017 / 2016 CHANGE	ASSET OWNER NAME
AAA	9	▲ 214	Ilmarinen Mutual Pension Insurance Company
AAA	10	▲ 69	Elo Mutual Pension Insurance Company
B	66	▲ 157	Varma Mutual Pension Insurance Company
D	205	▼ 29	Local Government Pensions Institution (Keva)
D	213	▲ 44	Sampo Group
D	255	▼ 132	Valtion Eläkerahasto (State Pension Fund)

REGIONAL TABLES

TABLE 24 / REGION: EMEA



2017 RATING	2017 RANK	ASSET MANAGER NAME
AAA	1	APG Asset Management
AA	2	Legal & General Investment Management
BBB	3	Aviva Investors
BBB	4	M&G Investments
BBB	5	Schroders Investment Management
BB	6	Allianz Global Investors
BB	7	Natixis Global Asset Management
BB	8	AXA Investment Managers
B	9	Deutsche Asset Management
B	10	HSBC Global Asset Management

TABLE 25 / REGION: ASIA PACIFIC



2017 RATING	2017 RANK	ASSET MANAGER NAME
D	33	Macquarie
D	34	Sumitomo Mitsui Trust Group
D	46	Nomura Asset Management

TABLE 26 / REGION: AMERICAS



2017 RATING	2017 RANK	ASSET MANAGER NAME
C	15	Goldman Sachs Asset management
C	16	BlackRock Inc
C	18	J.P. Morgan Asset Management
C	18	Morgan Stanley
C	21	PIMCO
C	23	AllianceBernstein
D	24	Dimensional Fund Advisors
D	25	State Street Global Advisors
D	26	Columbia Threadneedle Investments
D	28	RBC Global Asset Management

DATA TABLES

TABLE 27 / RATINGS BANDS

RATING	2017		2016		CHANGE	
	# ASSET OWNERS	AUM USD BILLION	# ASSET OWNERS	AUM USD BILLION	#	%
AAA	17	\$1,230	12	\$1,141	5	42%
AA	12	\$1,888	8	\$641	4	50%
A	5	\$1,044	11	\$896	-6	-55%
BBB	14	\$1,537	15	\$2,280	-1	-7%
BB	11	\$956	4	\$17	7	175%
B	9	\$611	6	\$1,089	3	50%
CCC	10	\$764	8	\$570	2	25%
CC	7	\$419	17	\$1,092	-10	-59%
C	27	\$2,212	16	\$1,695	11	69%
D	187	\$16,556	157	\$13,969	30	19%
X	201	\$12,508	246	\$14,348	-45	-18%
Total	500	\$39,725	500	\$37,737		

TABLE 28 / ASSET OWNERS BY RATING SUMMARY TABLE

CATEGORY			# ASSET OWNERS		CHANGE		AUM USD BILLION		CHANGE	
			2017	2016	#	%	2017	2016	#	%
Leaders	Top 7%	A PACK	34	31	3	10%	\$4,163	\$2,678	\$1,484	55%
Challengers	7% - 14%	B PACK	34	25	9	36%	\$3,103	\$3,386	-\$284	-8%
Learners	14% - 22%	C PACK	44	41	3	7%	\$3,395	\$3,356	\$39	1%
Bystanders	22% - 60%	D	187	157	30	19%	\$16,556	\$13,969	\$2,587	19%
Laggards	Bottom 40% Zero score	X	201	246	-45	-18%	\$12,508	\$14,348	-\$1,840	-13%
Total			500	500			\$39,725	\$37,737	\$1,988	5%

TABLE 29 / ASSET OWNERS BY CATEGORY SUMMARY TABLE

CATEGORY			# ASSET OWNERS		CHANGE		AUM USD BILLION		CHANGE	
			2017	2016	#	%	2017	2016	\$	%
Endowment		C	11	12	-1	-8%	\$342	\$356	-\$14	-4%
Foundation		CC	9	8	1	13%	\$179	\$166	\$13	8%
Pension fund		C	307	322	-15	-5%	\$15,363	\$15,868	-\$505	-3%
Sovereign wealth fund		D	35	38	-3	-8%	\$5,987	\$5,821	\$166	3%
Insurance company		D	137	118	19	16%	\$17,802	\$15,458	\$2,344	15%
Mutual fund		CCC	1	2	-1	-50%	\$51	\$67	-\$16	-24%
Total			500	500			\$39,725	\$37,737	\$1,988	5%

DATA TABLES

TABLE 30 / RATINGS BANDS

RATING	# ASSET MANAGERS	AUM USD BILLION
AAA	1	\$442
AA	1	\$1,140
A	0	\$-
BBB	3	\$1,283
BB	3	\$2,156
B	2	\$1,210
CCC	1	\$671
CC	3	\$1,359
C	9	\$11,421
D	24	\$20,557
X	3	\$3,199
Total	50	\$43,437

TABLE 31 / ASSET MANAGERS BY RATING SUMMARY TABLE

CATEGORY			# ASSET MANAGERS	AUM USD BILLION
Leaders	Top 4%	A PACK	2	\$1,582
Challengers	4% - 20%	B PACK	8	\$4,649
Learners	20% - 46%	C PACK	13	\$13,451
Bystanders	46% - 94%	D	24	\$20,557
Laggards	Bottom 6% Zero score	X	3	\$3,199
Total			50	\$43,437

METHODOLOGY

The AODP Global Climate 500 Index provides stakeholders with a ranking and rating to indicate how each major institutional investor performs in managing their exposure to climate risk. The objective of the survey is to encourage integration of climate change capability in portfolio management across the investment sector.

The survey comprises 37 questions covering the following three key areas assessing the investor's capability in managing portfolio climate risk:

GOVERNANCE & STRATEGY

- Organisation structure and approach it uses to oversee climate risk objectives.
- Degree of integration of climate risk principles in the organisation's policies and processes.



PORTFOLIO RISK MANAGEMENT

- Variety and effectiveness of tools and approaches used to evaluate and manage climate change related financial risks and opportunities. This includes engagement, voting practices, and portfolio management tools.



METRICS & TARGETS

- Key metrics used to measure, monitor and compare portfolio climate risk management performance, including the value asset owners have invested in low carbon assets.



RATINGS BANDS

RATING	CATEGORY	DESCRIPTION	FACTORS
AAA	Leaders	Elite	Demonstrates elite performance across all capabilities
AA	Leaders	Excellent	Demonstrates excellence in all capabilities
A	Leaders	Extremely Strong	Demonstrates strong performance across capabilities
BBB	Challengers	Very Strong	Taking advanced actions in multiple capabilities
BB	Challengers	Strong	Developing sophistication across multiple capabilities
B	Challengers	Advancing	Progressing to a wider variety of capabilities
CCC	Learners	Above Average	Considerable tangible action taken in at least one capability
CC	Learners	Developing	Progressively more action taken in at least one capability
C	Learners	Average	Starting to take action in at least one capability
D	Bystanders	Below Average	Limited disclosure on financial implications of climate change in investments
X	Laggards	Zero Score	No evidence of considering financial implications of climate change in investments

The survey has been remapped this year to align to the FSB TCFD's proposed framework for disclosure, to assist asset owners and managers in assessing their readiness for any forthcoming reporting requirements. Past years' results have also been realigned in these categories to reflect the new categories to maintain comparability.

The ratings are based on a mixture of publicly available information and asset owner disclosures. The world's largest long-term asset owners (pension funds, insurers, sovereign wealth funds, foundations and endowments) with at least USD2 billion in assets under management were invited to participate in this year's survey. This year, we also invited the Top 50 global asset managers to participate. Survey responses were used to rank and rate the asset owners to create the AODP Global Climate 500 Index.

The top 500 asset owners (by AUM) and any of the top 50 asset managers that decline the invitation to participate are researched by our team of analysts and assessed using publicly available information or information provided to us by their members or stakeholders. Investors are scored on actions implementing elements of climate risk best practice in their investment process.

Once all research is completed, peer reviewed and validated; the Ratings Manager aggregates all scores. Annual rating bands are determined statistically and each participant assigned a rating applicable to their aggregated score, from AAA through to D grade, with an additional X category for those that appear to be doing absolutely nothing to manage climate risk.



ACKNOWLEDGEMENTS

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THE VIEWS IN THIS REPORT REMAIN THOSE OF AODP.

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