

GLOBAL INVESTOR SURVEY ON CLIMATE CHANGE

3rd ANNUAL REPORT ON ACTIONS AND PROGRESS

COMMISSIONED BY THE NETWORKS OF THE GLOBAL INVESTOR COALITION ON CLIMATE CHANGE



Investor Network on
CLIMATE RISK



Investor Group on
Climate Change



GLOBAL INVESTOR COALITION ON CLIMATE CHANGE

Report prepared by  **MERCER**



About Institutional Investors Group on Climate Change

Institutional Investors Group on Climate Change (IIGCC) is a forum for collaboration on climate change for investors in Europe. It provides investors with the collaborative platform to encourage public policies, investment practices, and corporate behaviour that address long-term risks and opportunities associated with climate change. IIGCC currently has over 80 members, including some of the largest pension funds and asset managers in Europe, representing around €7.3trillion in assets.

IIGCC pursues its mission through two strategic objectives:

- Changing market signals by encouraging the adoption of strong and credible public policy solutions that ensure an orderly and efficient move to a low carbon economy, as well as measures for adaptation.
- Informing investment practices to preserve and enhance long-term investment values.

www.iigcc.org



About Investor Network on Climate Risk

The Investor Network on Climate Risk (INCR) is a network of 100 institutional investors based primarily in North America, representing more than \$11 trillion in assets committed to addressing the risks and seizing the opportunities resulting from climate change and other sustainability challenges. INCR works with its members on climate-related investment practices, corporate engagement, and disclosure and policy issues.

INCR is coordinated by Ceres, a U.S.-based coalition of investors and public interest groups advocating sustainable business practices and solutions to build a healthy global economy. Launched by 10 investors in 2003, INCR has grown to include the leading North American institutional investors including state and city treasurers and comptrollers, public and labour pension funds, foundations, other institutional investors and a wide range of Asset Managers. INCR works with its members on sustainable investment practices, corporate engagement and policy advocacy.

www.incr.com



About Investor Group on Climate Change

The Investor Group on Climate Change (IGCC) is a collaboration of 66 Australian and New Zealand investment organisations, with approximately \$1trillion in assets. IGCC aims to encourage government policies and investment practices that address the risks and opportunities of climate change, for the ultimate benefit of superannuants and unit holders. IGCC does this by:

- Raising awareness of the potential impacts, both positive and negative, resulting from climate change to the investment industry, corporate, government and community sectors.
- Encouraging best practice approaches for including the impacts of climate change in investment analysis by the investment industry.
- Providing information to assist the investment industry to understand and incorporate climate change into investment decisions.

www.igcc.org.au



About Asia Investor Group on Climate

The Asia Investor Group on Climate Change (AIGCC) is a forum set up in 2011 by the Association for Sustainable & Responsible Investment in Asia, to assist Asia's asset owners and institutional investors to consider the risks and opportunities associated with climate change and low carbon investing. AIGCC provides a platform for financial institutions to share best practice and to collaborate on investment activity, analysis, risk management, engagement and policy. It offers education and networking, Asia-specific analysis and tools, resources and research on climate. AIGCC is also a channel for communication with companies, financial institutions, regulators and policy makers on climate, carbon and energy issues. The AIGCC network includes asset owners, investors, insurers and banks across Asia.

www.aigcc.asia.org



About the Global Investor Coalition on Climate Change

In December 2012, the four regional climate change investor groups, IIGCC (Europe), INCR (North America), IGCC (Australia & New Zealand) and AIGCC (Asia) formed the Global Investor Coalition on Climate Change (GIC) for joint projects and initiatives that benefit from global collaboration. The coalition provides a global platform for dialogue between investors and governments on policy and investment practice related to climate change and a focal point for international fora. The work of the GIC is guided by a three-year Action Plan leading up to 2015 consistent with the priorities of the member networks.

www.globalinvestorcoalition.org



Investor Network on
CLIMATE RISK



Investor Group on
Climate Change



GLOBAL INVESTOR COALITION ON CLIMATE CHANGE



The networks in the Global Investor Coalition commissioned Mercer to conduct this year's survey and report collation.

Mercer is a leading global provider of investment services. As one of the largest investment consulting and management firms in the world, Mercer employs approximately 1,300 investment staff across 23 countries and territories, and has had a specialist Responsible Investment team since 2004. Mercer has been dedicated to meeting the needs of clients for more than 40 years, and now offers customised guidance on every aspect of institutional investing from strategy, structure and implementation to ongoing fiduciary management. Globally Mercer advises more than 3,700 clients on assets in excess of \$6 trillion and manages assets in excess of \$70 billion.

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1 Foreword

Since the release of the second global survey of climate-related investment practices in 2012, the amount of carbon dioxide in the atmosphere reached levels not seen in three million years. Meanwhile, the number of billion-dollar severe weather events continued to climb, with Superstorm Sandy packing an unprecedented storm surge that ravaged the U.S. East Coast causing more than \$60 billion in damages. Institutional investors are taking note of climate risks and many are taking steps to integrate these risks and climate-related opportunities, such as clean energy and resilient infrastructure, into their investment decisions.

Yet, the flow of capital towards low-carbon solutions and away from carbon-intensive technologies risks being undermined by inadequate, inconsistent and halting policy efforts by world governments, especially in major greenhouse gas emitting nations. Despite overwhelming scientific evidence that human activity is warming the planet with increasingly serious economic consequences, policymakers have failed to act with the level of urgency and clarity the problem requires. The need for more decisive action by investors, by businesses and by policymakers is increasingly clear.

The results of this third global survey of climate-related investment practices, summarised in this report, are consistent with last year's results: while members of the investor networks surveyed continue to show a strong commitment to addressing climate change in their investment activities, translating that commitment into investment decisions that reduce climate risks to portfolios and leverage climate-related investment opportunities remains a challenge. Leading investors continue to advance their climate-related investment practices, and are prepared to do significantly more with the appropriate policy signals.

Thus, credible, consistent legal frameworks regulating greenhouse gas emissions and incentivising clean energy investment are essential to achieving the necessary transition to a global low carbon economy. Institutional capital can and will flow at scale into clean energy and low carbon solutions only with adequate policy support that provides the necessary degree of investment certainty.

This year's survey was coordinated by the Global Investor Coalition on Climate Change, a coalition that includes the Europe-based Institutional Investors Group on Climate Change; the North American-based Investor Network on Climate Risk; the Australia/New Zealand-based Investor Group on Climate Change; and the recently formed Asia Investor Group on Climate Change. As part of these networks, the investors surveyed are at the leading edge of the investor response to climate change. Though many of the world's largest institutional investors are represented, the broader global investor community needs to become more active on this issue.

One of the significant benefits of this survey report is the opportunity it provides for self-examination, peer learning and sharing of best practices among participating investors in integrating climate risks and opportunities across all facets of their work. Considerably greater adoption and advancement of these practices by investors in all of the world's major markets will be necessary – along with better reporting and increased transparency – to mitigate the risks presented by climate change to all investors and economies.


Meeting the climate challenge will require bolder action and greater collaboration among investors, companies, policymakers and other stakeholders. The challenge is a formidable one and solutions on a global scale are urgently needed.



Stephanie Pfeifer
Chief Executive
IIGCC



Chris Davis
Director of Investor Programs
Ceres



Nathan Fabian
Chief Executive
IGCC



Alexandra Tracy
Senior Advisor
AIGCC

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Executive summary

This is the third annual report on the results of the Global Investor Survey on Climate Change. This year it was commissioned by the Global Investor Coalition on Climate Change (GIC), comprised of the four regional investor networks – the Institutional Investors Group on Climate Change (Europe), the Investor Network on Climate Risk (North America), the Investor Group on Climate Change (Australia and New Zealand) and the Asia Group on Climate Change (Asia) – whose members include many of the world's largest Asset Managers and Asset Owners.

The report provides an overview of climate-related investment practice by members of the GIC networks, focusing on the integration of climate change considerations into investment processes and actions taken during 2012. This report presents the key findings from the annual survey and provides an overview of emerging best practices. It is based on the survey responses from 37 Asset Owners and 47 Asset Managers that participated, and is focused on actions taken during 2012. In aggregate the 84 participating investors have assets in excess of USD14 trillion and are based in ten countries.

The GIC networks would sincerely like to thank the participating members for the time they committed to completing the survey and also those that contributed to the audit and case-study follow-up calls.

The memberships of the four GIC investor networks represent global leadership on climate and investment behaviour. The activities they are undertaking showcase what a leading subset of investors are doing to better understand, plan for and, most importantly, manage the risks and opportunities that result from climate change and climate policy.

Key findings

This year's report shows that during 2012, members of the GIC networks have retained and, in many cases, advanced their practices to address climate change in their investment activities. This is despite the ongoing economic challenges and continuing policy uncertainty and reflects increasing awareness among investors that climate risks continue to worsen.

There is a clear trend in the results showing that climate risk analysis is performed within asset classes and for specific investments rather than at the portfolio level. Climate risk analysis in equity portfolios for example is performed by almost 100% of respondents and real estate and infrastructure portfolios are receiving increasing levels of attention with respect to physical climate and policy or regulatory impacts. Around half of asset owners undertook a climate risk assessment at the portfolio level, and around half of these made changes to their investment activities as a result.

This year's report highlights allocations to 'low carbon investments' and the way investors think about risk analysis, particularly in relation to 'emissions intensive investments'. A number of respondents are either divesting or electing not to invest, based on climate change concerns, although the extent to which these practices apply across portfolios will require further examination in future years. Seeking better information on low carbon and emissions intensive investments within portfolios appears to be one of the major areas of opportunity arising from this year's survey.

Engagement by Asset Owners and Asset Managers with policy makers and companies remain core tools for addressing climate change risks with high levels of activity in these areas. This reflects the fact that institutional investors in large diverse markets continue to face challenges to diversifying away from emissions exposures when policy signals do not sufficiently support changes.

Key results are provided below with the more detailed analysis outlined in the corresponding chapters.

Chapter 3 Investor risk perceptions – strategy and policy responses

This chapter provides an overview of investors' perceptions of climate change and the firm-wide and portfolio wide commitment demonstrated by investors.

- The majority of respondents continue to view climate change as a material risk across their total portfolio and make reference to this in their investment policy.
- 56% of Asset Owners conducted formal or informal climate risk assessments of their portfolios.
- 25% of Asset Owners have made changes to their investment strategy or decision-making process in 2012 as a result of climate risk assessments (45% of Asset Owners who undertook a risk assessment).
- There has been a meaningful improvement in the adequacy of consulting advice on climate change (71% providing a favourable response compared to last year's 26%).
- Responses indicate some improvement on reporting last year with only 14% of Asset Owners and 21% of Asset Managers not providing any reporting and the vast majority of those Asset Owners planning to do so during 2013. Levels of public reporting have remained the same, with the majority of Asset Owners (56%) and Asset Managers (55%) reporting publicly on climate activities. It is a similar response on reporting specifically to trustees/management (60% of Asset Owners and 49% of Asset Managers), with a lower response to reporting specifically to beneficiaries.

Chapter 4 Assessing and analysing carbon risk

This chapter describes how Asset Managers, including internal managers of Asset Owners, implement carbon evaluation processes within asset classes.

- Almost 100% of respondents with direct responsibility for managing assets continue to conduct climate risk assessments within asset classes, considering factors such as regulations, corporate governance and physical impacts.
- Of the nine risks proposed for assessment in investment analysis, the combined results for Asset Owners and Asset Managers indicate that the top four factors were regulatory changes, government support schemes, physical impacts and corporate governance.
- 83% of respondents are utilising a combination of qualitative and quantitative data, with 17% solely using qualitative inputs. Quantitative data is being used by most respondents for investment analysis on valuations and for engagement purposes.
- 79% of Asset Managers and 40% of Asset Owners with internal teams thought that wider verification of climate change data (reported scope 1 and 2 emissions) would encourage greater use in investment analysis.

Chapter 5 Investment allocations – low and high carbon

This chapter explores the drivers and challenges related to low carbon investment opportunities, including renewables, and the extent to which Asset Managers and Asset Owners allocate funds to these investments. It also reviews exposures to highly emissions intensive assets.

- There has been some progress on detailed analysis of portfolio exposure to both 'low carbon' investments and emissions, but further work is needed.
- 70% of Asset Owners and 60% of Asset Managers reported low carbon investments, based on this year's new definitions.
- 50% of Asset Owners and 52% of Asset Managers reported that they had exposure to low carbon assets via developed market equity investments, making this the asset class with the highest level of reported low carbon exposure. Few respondents were able to quantify the value of low carbon exposure via equity investments with confidence.

- Real estate was the asset class for which respondents were best able to quantify the value of their exposure and this had the highest dollar amount exposure. It is also the asset class that is most advanced as regards tracking and monitoring frameworks, but there is not yet consistency in minimum standards for 'low carbon' properties across the industry.
- 26% of Asset Owners and 30% of Asset Managers have conducted formal assessments of their exposure to emissions intensive investments, with the qualitative responses suggesting higher rates of informal activity in this area.

Chapter 6 Public policy and company engagement

This chapter highlights how investors are engaging to raise corporate standards and individually and collaboratively encouraging policymakers to provide a policy framework that is supportive of long-term investment decision-making and the move to a low carbon economy.

- The GIC networks continue to facilitate high-level public policy engagement activities on behalf of their members in each region that the groups operate, despite challenging political environments.
- Direct corporate engagement by Asset Owners has increased by 20% on last year's results, reflecting the importance placed on the activity and the value attributed to active ownership.
- 53% of Asset Managers have made a decision to divest or not to invest in listed equities based on climate change concerns. Examples given for these decisions typically referenced emissions intensity.

Chapter 7 Investment manager selection and monitoring

This chapter provides an overview of whether and how Asset Owners include climate change considerations in the selection and monitoring of external Asset Managers.

- Most Asset Owners in this year's survey (83%) consider the extent to which managers integrate climate change into their investment process and ownership activities and 69% indicated that it influenced their selection decision (up from 43% last year).
- Climate change issues are included in due diligence processes, interviews and criteria in Requests for Proposals (RFPs) but not yet half of the respondents (43%) included this in new Investment Management Agreements (IMAs).
- In 2012, 63% of Asset Owners (up on last year's 53%) monitored their existing Asset Managers on climate change integration. Only 23% of Asset Owners have set clear expectations of their existing managers on climate change in their IMAs.

Chapter 8 Asset class responses and examples

This chapter provides an overview of how Asset Managers and the internal managers of Asset Owners integrate climate change considerations into investment analysis or due diligence processes across asset classes, including Real Estate, Infrastructure and Commodities.

- In 2012 there was a substantial amount of climate related activity by real estate Asset Managers in particular in relation to on-site building improvements. They covered a wide variety of activities, but the key focus was on energy efficiency, and then waste and water management. There was also a strong indication that this activity was expected to continue or increase in 2013.
- Responses on asset classes outside real estate were more limited, but more than 50% of internally managed infrastructure assets were monitored for climate change risks.
- Just over a third of Asset Managers responding to the infrastructure questions elected not to invest or divested from an infrastructure investment due to climate change concerns.

Case study index

A reference guide for this year's member case studies is provided below:

- Case Study 1** **BT Financial Group /Advance** (Australia)
Risk framework for retail multi-manager funds (pg 12)
- Case Study 2** **LGS** (Australia)
Sustainable government bonds (pg 18)
- Case Study 3** **PGGM** (Netherlands)
ESG-enhanced equity benchmark (pg 18)
- Case Study 4** **Impax Asset Management** (UK)
Equity index development for climate change solutions (pg 19)
- Case Study 5** **Cbus** (Australia)
Low carbon assessment process (pg 22)
- Case Study 6** **The California State Teachers' Retirement System (CalSTRS)** (USA)
Engagement on energy efficiency (pg 32)
- Case Study 7** **The Church of England National Investing Bodies** (UK)
Climate change policy and engagement (pg 32)
- Case Study 8** **Pax World Management LLC** (USA)
Climate Change policy and proxy voting developments (pg 33)
- Case Study 9** **The Unitarian Universalist Association** (USA)
Climate Change policy and engagement (pg 34)
- Case Study 10** **Prudential Investment Management** (USA)
Assessing Climate Risk in Property Portfolios (pg 44)
- Case Study 11** **PRUPIM** (UK)
Assessing climate risk in property portfolios (pg 45)
- Case Study 12** **Hastings Fund Management** (Australia)
Assessing climate risk in infrastructure portfolios (pg 47)

Methodology

This project was divided into four distinct stages: drafting this year's investor survey, verification of responses, analysis of data and production of the final report.

The GIC networks commissioned Mercer to conduct two surveys – one for Asset Owners (including those with internal Asset Managers) and one for Asset Managers. The surveys were based on the questions used in the 2011 questionnaire, with some modifications, in order to allow for year-on-year comparison of results where possible.¹

As in previous years, Mercer was asked to conduct follow-up interviews with respondents selected from each region to verify survey responses as well as obtain further information that could be used in the case studies.

The final report considers the results of both the surveys and the verification calls. It provides evidence on how investors are building their knowledge of climate change and integrating this learning in their investment decision-making and engagement activities.

Case studies are used to highlight best practice across all of these areas and to provide examples of ongoing efforts amongst the GIC networks. Where appropriate, the report highlights the (positive and negative) trends in investors' activities.

¹ Please see www.iigcc.org/publications/investor-guides for further information on previous annual survey reports published by the IIGCC.

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Investor risk perceptions – strategy and policy responses

Headlines

- The majority of respondents continue to view climate change as a material risk across their total portfolio and make reference to this in their investment policy.
- 56% of Asset Owners conducted formal or informal climate risk assessments of their portfolios.
- 25% of Asset Owners have made changes to their investment strategy or decision-making in 2012 as a result of climate risk assessments (45% of Asset Owners who undertook a risk assessment).
- There has been a meaningful improvement in the adequacy of consulting advice on climate change (71% providing a favourable response compared to last year's 26%).
- Responses indicate some improvement on reporting last year with only 14% of Asset Owners and 21% of Asset Managers not providing any reporting, and the vast majority of those Asset Owners are planning to do so in 2013. Levels of public reporting have remained the same, with the majority of Asset Owners (56%) and Asset Managers (55%) reporting publicly on climate activities. It is a similar response on reporting specifically to trustees/management (60% of Asset Owners and 49% of Asset Managers), with a lower response to reporting specifically to beneficiaries.

This chapter focuses on the survey questions that addressed the strategic and operational commitment of respondents at a total portfolio level, for example whether investment policies specifically reference climate change, whether portfolio climate risk assessments are conducted, and the extent of advice and reporting on climate and related issues.

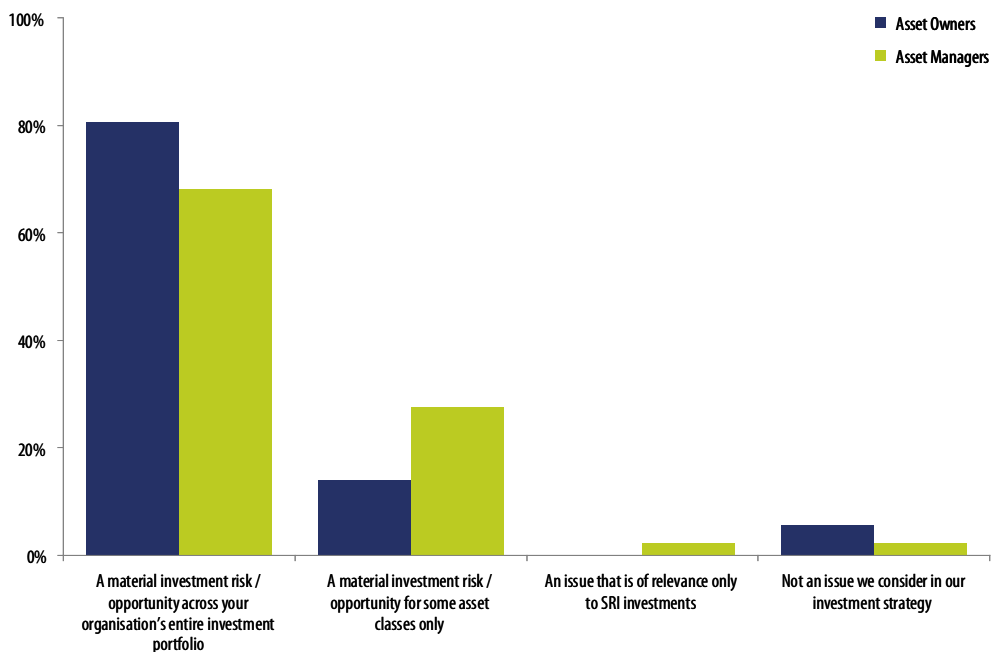
Risk materiality and policy references

The majority of responding Asset Owners (81%) and Asset Managers (68%) stated they view climate change as a material risk or opportunity across their entire investment portfolio. The bulk of the remaining responses see climate change as a material risk across some asset classes only – primarily public and private equities, real estate, and infrastructure, with cash typically excluded and some debate over the potential impacts for corporate and sovereign debt. This was reflected well in an Asset Manager comment:

“We view climate change as a risk/opportunity across all portfolios. It is more material in some asset classes than others. The risk/opportunity is most material in our real estate portfolios. We are eager to find ways to make the link to public equity and fixed income. However, issues around climate change tend to be longer term in nature and not deemed material in the typical holding period for public equities and fixed income. We would welcome more support in the effort to identify materiality in public portfolios”.

North American Asset Manager

Figure 1 Investor perception of climate change risk materiality



Following on from this, the majority of respondents also make reference to climate risk in their investment policies – 64% of Asset Owners and 77% of Asset Managers. The figure is lower than the materiality figures, particularly for Asset Owners, which can be explained by a number of comments which indicated that investment policies typically address environmental, social and governance (ESG) issues in general rather than singling out climate explicitly.

Strengthening the signal to Asset Managers that climate risk is considered material by Asset Owners by using incentives, merits further attention, with 47% including an incentive and 53% not adopting this approach. This is less relevant for Asset Owner internal teams.

Risk assessment by Asset Owners across the portfolio

Over half (56%) of Asset Owners declared that they use a formal or informal framework to identify risks related to climate change in their portfolio. There has been no change in this response from last year.

Formal assessments are generally conducted through the measurement of a portfolio's carbon footprint; however, while carbon emissions are an important indicator, there are more factors to consider in integrating climate change considerations.

Some investors are struggling to define the investment risk specific to climate change whereas others have established formal processes for identifying climate (and other ESG) risk at the asset class level. Responses indicate a greater likelihood that an informal risk framework is in place, working with data providers and underlying managers, while Mercer's formal 'TIP' factor risk framework is referenced by those who participated in the research in 2010/2011.

Changes to strategy and processes

Asset Owners and Asset Managers are continuing to make changes to their investment strategy or decision-making process based on their assessments of climate risk.

25% of the Asset Owners in this year's survey have made changes based on their assessment of climate risk (56% of Asset Owners state that a climate risk assessment is conducted and 45% of those investors made changes based on the assessment). The regional breakdown for Asset Owners making changes based on their internal assessment of climate risk shows a similar level for European and Australian Asset Owners with only one North American owner formally making changes on the back of a risk assessment.

40% of Asset Managers in this year's survey have made changes based on their assessment of climate risk. Around half of the supporting comments suggested changes to process rather than investment strategy, but there were a significant number that referred to regulation and legislative changes or uncertainty impacting on their investment strategy decisions.

A case study example is included below outlining one network member's strategic risk framework developments in 2012.

Case study 1 BT Financial Group – Advance (Australia) – risk framework development for retail multi-manager funds

The BT Financial Group is the Australian wealth management business of Westpac Bank, managing \$36 billion of assets. Advance is a well profiled brand within the Group that offers multi-manager investment and superannuation options to individuals.

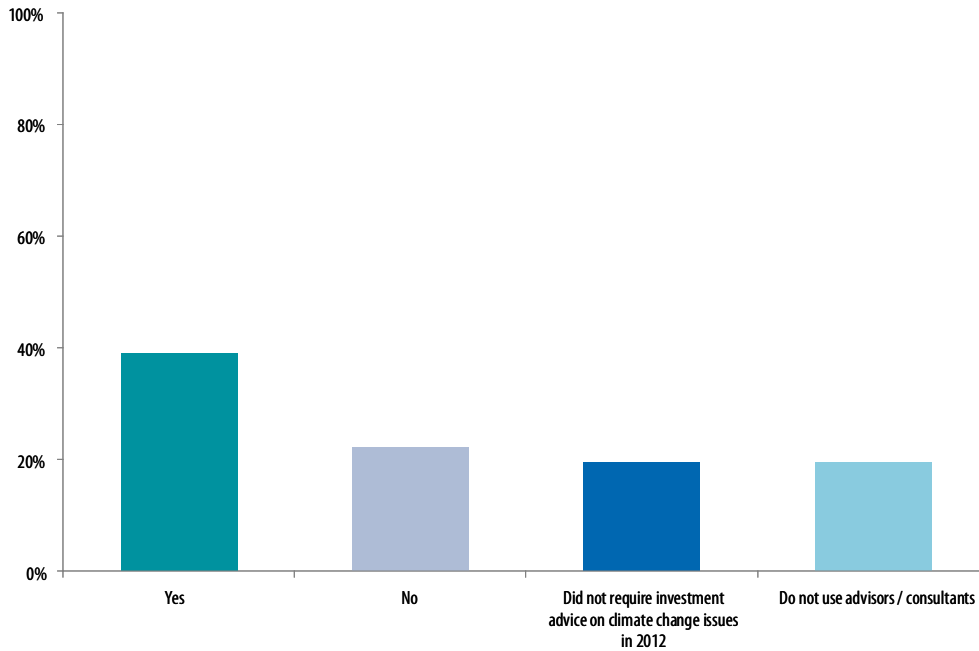
The Advance team has an informal, risk assessment framework, which draws upon engagement with external managers together with knowledge and education from research providers, including consultant Towers Watson, brokers, IGCC, and other climate related organisations, parent organisation Westpac and other sources. The aim of the framework is to inform investment decision making at all levels of the investment chain where climate change could have a material impact on investment outcomes. Using the expertise of a sustainability specialist and sector portfolio managers, the focus has been on the interaction with fund managers, assessment of climate change incorporation in decision making and informing views on the impact to the portfolio. Specifically, this framework formed the basis for an assessment of the initial and ongoing impacts of the introduction of the Australian carbon pricing mechanism, to keep abreast of developments in global carbon markets, to undertake quantitative and qualitative assessments of carbon risk to the portfolio and to inform Advance's sustainability rating of implemented and prospective managers.

At this stage, implementation has not involved mandated restrictions for managers. Other implementation approaches are being considered, including asset allocation as a means with which to protect a portfolio from climate risk.

Advice

The survey data suggests that the use of investment advice related to climate change is variable.

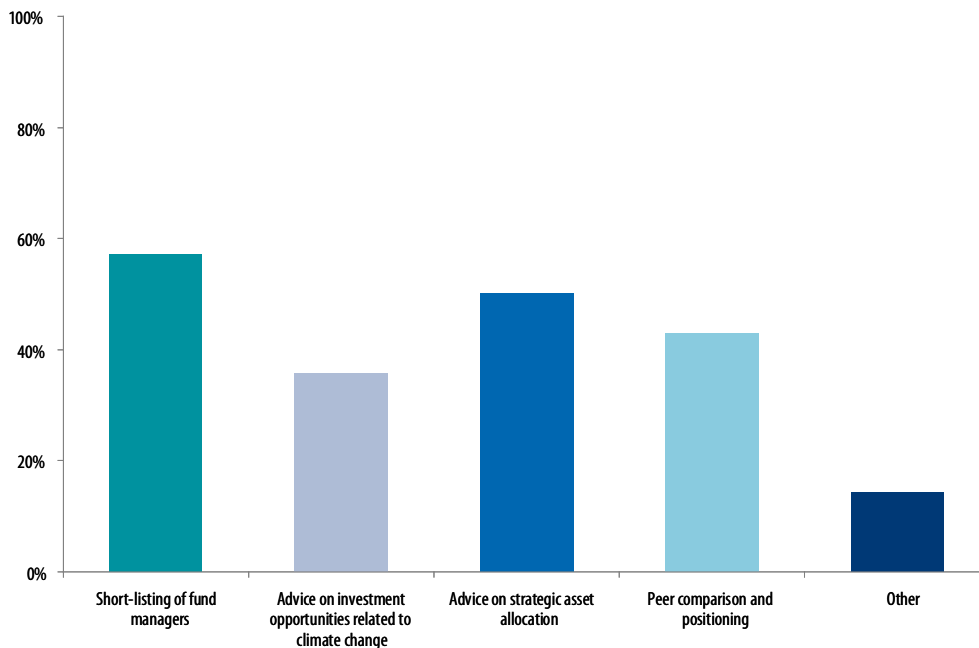
Figure 2 Asset Owners accessing advice



Less than half (39%) of Asset Owners sought climate-related advice in 2012. This is similar to last year. Of those that sought advice, 71% were confident the advice was adequate, and this is a meaningful improvement on last year's 26%.

Advice was used for manager search and selection processes, benchmarking and strategic investment advice.

Figure 3 Asset Owner advice focus areas



Reporting

Levels of public reporting have remained the same as in 2011, with the majority of Asset Owners (56%) and Asset Managers (55%) indicating that they report publicly on climate related activities. Reporting that is specifically intended for beneficiaries is substantially lower than public reporting, with only 24% of Asset Owners and 38% of Asset Managers reporting in this way. The reasons for this are unclear.

60% of Asset Owners indicated that they report to trustees / management on climate related investment activities and 49% of Asset Managers indicated that they do the same. This compares to 81% of Asset Owners that identify climate change is a material risk and 68% of Asset Managers reporting the same. Understanding and improving performance in this area is an opportunity for the GIC networks.

Overall reporting has improved on last year with only 14% of Asset Owners and 21% of Asset Managers not providing any reporting and the vast majority of those Asset Owners are planning to do so during 2013. This leaves only a small number of Asset Managers yet to commit to improving their reporting and disclosure practices. These responses were fairly evenly spread by region, although Australian Asset Owners and Asset Managers were least likely to report publicly.

Figure 4 Investor reporting disclosure

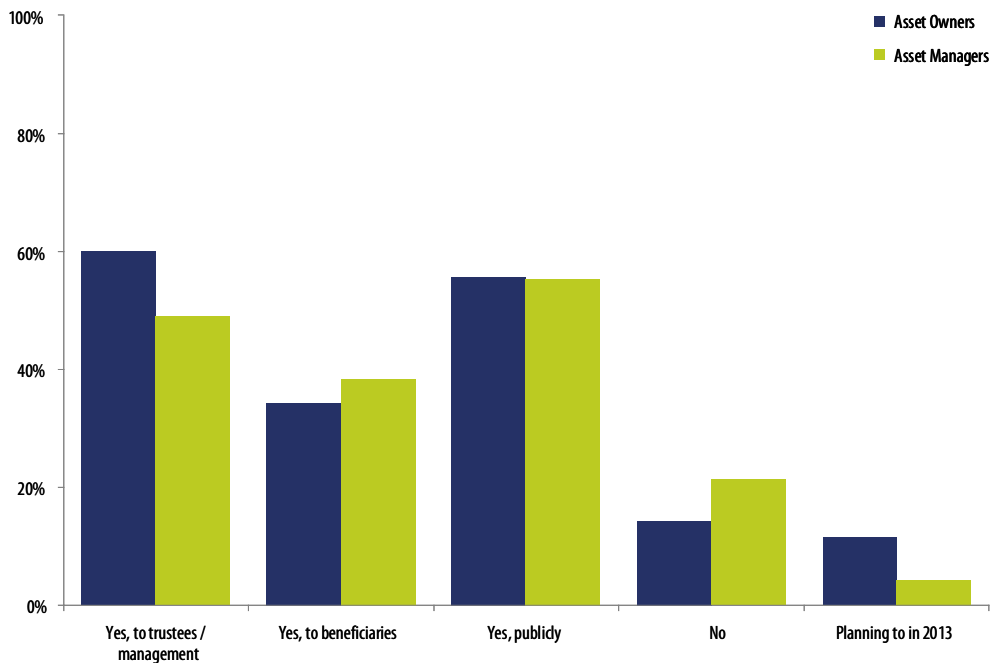
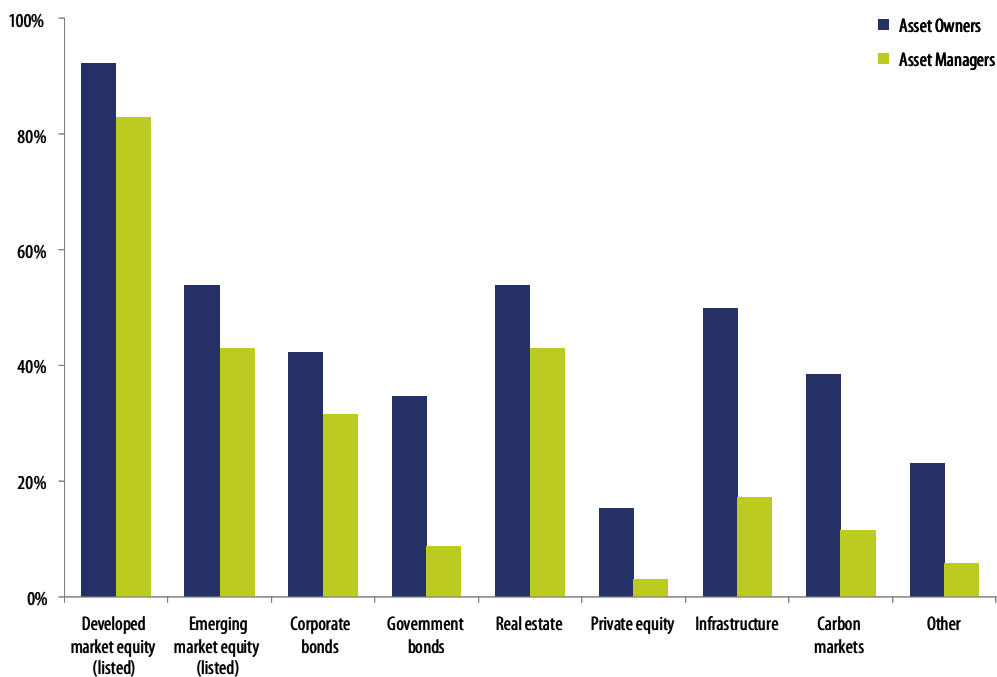


Figure 5 Investor reporting by asset class



Concluding comments

The survey results indicate that identifying climate change as a material investment risk does not necessarily lead to changes in investment practice at the portfolio level, but rather that changes are being made in other ways. Almost all Asset Owners and Asset Managers identify climate change as a material risk, but about half use a risk assessment framework across the portfolio to interpret it and about a quarter have changed an investment process or decision-making process as a result of their analysis. 61% of Asset Owners do not seek advice on climate change at the portfolio level reinforcing the trend for analysing and addressing climate risk within asset classes and for specific investments. These results raise questions about how investment practice should change as a result of awareness of the risks of climate change. The following chapters will explore other more widely used investment practices to address climate risks, including: those within asset classes; the use of research to assess climate risks; the role of investors in climate public policy and in influencing company practice.

4 Assessing and analysing carbon risk

Headlines

- **Almost 100% of respondents with direct responsibility for managing assets continue to conduct climate risk assessments within asset classes, considering factors such as regulations, corporate governance and physical impacts.**
- **Of the nine risks proposed for assessment in investment analysis, the combined results for Asset Owners and Asset Managers indicate that the top four factors were regulatory changes, government support schemes, physical impacts and corporate governance.**
- **83% are utilising a combination of qualitative and quantitative data, with 17% solely using qualitative inputs. Quantitative data is being used by most respondents for investment analysis on valuations and for engagement purposes.**
- **79% of Asset Managers and 40% of Asset Owners with internal teams thought that wider verification of climate change data (reported scope 1 and 2 emissions) would encourage greater use in investment analysis.**

This chapter provides an overview of the processes adopted by Asset Managers and the internal managers of Asset Owners to assess their exposure to carbon risk within asset classes. The approaches used vary between the asset classes in which investment is made. Assessing climate risk for fixed assets such as real estate and infrastructure is generally focused on the potential physical impacts of climate change and/or carbon emissions of specific assets. For listed equities, carbon emissions are used to assess potential liabilities under carbon pricing or taxation schemes.

Risk assessment in due diligence and investment analysis

Survey data indicates that Asset Managers are more proactive than Asset Owners in assessing climate risk and opportunities within due diligence processes and in investment analysis. 98% of Asset Managers incorporated climate change risks/opportunities into due diligence and investment analysis processes as did 79% of Asset Owners with internal teams. This may reflect the sorts of asset classes that are being managed internally e.g. cash and fixed interest, and the resourcing differences between Asset Managers and Asset Owners.

Of the nine risks proposed for assessment in investment analysis, the combined results for Asset Owners and Asset Managers indicate that the top four factors were:

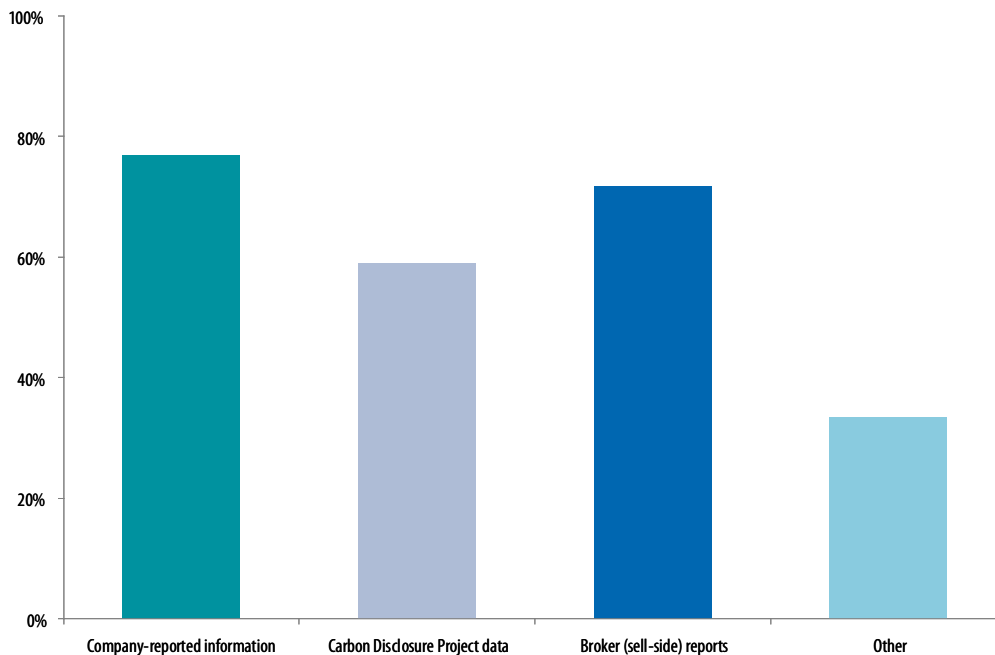
- Existing / prospective regulatory changes related to greenhouse gas emissions
- Government support schemes
- Physical impacts
- Quality of corporate governance, policies, management and actions relating to climate change

Quantification of climate impact

17% of Asset Managers utilised only qualitative analysis, with 83% using a combination of qualitative and quantitative inputs. This section reviews the measurement of climate impacts; what quantitative data is used, how this is used, and views on the data available.

The quantitative data used included the options outlined in the chart below, with the 'other' category primarily capturing other third party, non-broker data providers. These were very similar figures for Asset Owners with internal teams, but they were less likely to use CDP data and more likely to indicate 'other' data.

Figure 6 Sources of quantitative data used by Asset Managers



This data was primarily used by both Asset Managers (82%) and Asset Owner internal teams (62%) for investment analysis on valuations, followed by engagement (67% of Asset Managers and 45% of Asset Manager internal teams), with lower responses provided for portfolio assessments and 'other'. A sample quote is provided below for how quantitative data is used.

"We source external ESG research to undertake 6 monthly carbon and ESG risk portfolio 'audits' across our listed equities portfolio to identify high carbon risk concentrations in our portfolio."

Australian Asset Owner

79% of Asset Managers and 40% of Asset Owners with internal teams thought that wider verification of climate change data (reported scope 1 and 2 emissions) would encourage greater use in investment analysis.

Three case studies are provided below, outlining different approaches to climate change risk in bonds and equities.

Case study 2 LGS (Australia) sustainable global government bond strategy

Local Government Super (LGS) is an Australian fund that manages almost \$7 billion in superannuation assets for around 90,000 members, including employees working for local government or related employers and former local government employees. LGS has approximately \$3.7 billion invested in defined responsible investment strategies across Australian shares, international shares, property, and the absolute return and private equity asset classes.

LGS utilises ESG research covering approximately 90 countries across 70 different E, S and G indicators, enabling LGS to consider resilience to their key ESG 'macro themes' – financial market instability; climate change; resource scarcity and ageing population. In 2012, LGS adopted a new sustainable global government bond strategy, representing almost \$170 million. The low risk approach to this defensive asset class has been maintained, but now explicitly incorporates environmental, social and governance (ESG) risk analysis into all aspects of the investment process for selecting the bonds issued by global governments and their agencies.

LGS worked with an external manager, Omega Global Investors, and external ESG Research provider, MSCI ESG Research, to come up with an approach that steers the portfolio towards countries with lower debt levels; better regulations; less corruption; better key carbon/environmental and social indicators and greater resilience and capacity to deal with current and future mega ESG challenges. The sustainable government bond strategy also has a specific allocation to invest up to 15% of the portfolio in 'green' or 'climate bonds' issued by multilateral agencies such as the World Bank, European Investment Bank or Asian Development Bank. These bonds have the same credit rating (usually AAA) and yield returns as other bonds issued by these agencies – however these explicitly fund certified green projects such as wind farms in China, Turkey, Egypt and Austria, Thailand's first major solar power project, and Colombia's sustainable urban transport system.

The strategy has been in place since the beginning of April 2012 and with the current financial market volatility emanating in Europe is currently performing well relative to its performance benchmark. The ESG analysis has contributed to this relatively good performance and the portfolio and its green bonds also represents a type of 'sustainability dividend'.

Case study 3 PGGM (Netherlands) constructing an ESG-enhanced equity benchmark

PGGM provides asset management services and policy advice to pension funds in the Netherlands. It manages approximately €130 billion of pension assets for more than 2.5 million participants. PGGM has a long-established commitment to responsible investment, which it defines as "consciously taking account of environmental, social and corporate governance factors in all our investment activities".

In 2012 PGGM developed an 'ESG-enhanced' benchmark against which all of its €40 billion in listed equities are now passively managed. This ESG index is based on the FTSE All-World index, holding 93% of the constituents.

PGGM identifies the bottom decile of companies based on a broad set of ESG indicators, including climate change. If PGGM's holding in these companies exceeds €10 million or 0.2% of the company, the company is kept on a 'watch list' but stays in the ESG Index during a 12-24 month engagement programme by PGGM. If the company improves against the ESG criteria it remains in the index, otherwise its shares are sold. Any holdings below the €10 million / 0.2% threshold are sold immediately.

The ESG index aims to provide the same risk-return profile as the FTSE All-World benchmark whilst also providing a clear system for managing ESG risk. The process described above allows PGGM to identify the stocks with the highest ESG risk and focus its engagement efforts. The extent of engagement focused on climate risk will depend on the company and sector. The objective is to reduce the risk over time or otherwise remove it – via divestment – from the passive portfolio.

Case study 4 Impax Asset Management (UK) – equity index development in climate change solutions

UK firm Impax Asset Management is a specialist investor in resource efficiency and environmental markets, with approximately US\$3.5 billion of assets under management. It has been identifying and investing in opportunities in listed and private equity markets since 1998.

Climate change is one of the key drivers within Impax's investment thesis, along with resource scarcity, population growth, urbanisation, pollution control and the demand for clean water. These drivers create the opportunity set from which Impax selects its investments – a global universe of approximately 2,400 listed companies and a large number of privately owned companies that deliver cleaner or more efficient basic services.

This universe was formalised in 2007 in collaboration with the index provider FTSE as the Environmental Markets Classification System, from which the FTSE Environmental Markets Index Series is derived. For consideration in the investment universe, companies are required to derive at least 20% of their revenue from the following markets: renewable and alternative energy, energy efficiency, water infrastructure and technologies, pollution control, waste management and environmental support services. Impax and FTSE are currently looking at including food and agriculture in the Classification System – an indication of the growth in demand for more sustainable farming practices.

Impax operates in a specialised but rapidly growing market – allocating institutional capital to support the development of solutions to climate change and related resource scarcity challenges. Further, through its partnership with FTSE – in defining the growing universe of companies active in environmental markets – it has an impact that is much greater than its size might suggest.

Concluding comments

Results in this chapter indicate that analysis of climate risk within asset classes and particularly in public equities, infrastructure and real estate is the most widely used analytical approach for investors. Analysis appears to focus on the impact of expected weather events on assets or policies to reduce emissions on the earnings of companies. The extent to which analysis is performed on how climate risk in one asset class or industry might impact investment performance in other asset classes or industries was not examined in this survey and is a potential area for exploration in future. Given that Chapter 3 indicates that portfolio wide analysis is a less favoured approach to assessing climate risk, understanding the extent of systemic analysis within and between asset classes appears to be highly important.

Headlines

- **There has been some progress on detailed analysis of portfolio exposure to both 'low carbon' investments and emissions, but further work is needed.**
- **70% of Asset Owners and 60% of Asset Managers reported low carbon investments, based on this year's new definitions.**
- **50% of Asset Owners and 52% of Asset Managers reported that they had exposure to low carbon assets via developed market equity investments, making this the asset class with the highest level of reporting on low carbon exposure. Few respondents were able to quantify the value of low carbon exposure via equity investments with confidence.**
- **Real estate was the asset class for which respondents were best able to quantify the value of their exposure and this had the highest dollar amount exposure. It is also the asset class that is most advanced as regards tracking and monitoring frameworks, but there is not yet consistency in minimum standards for 'low carbon' properties across the industry.**
- **26% of Asset Owners and 30% of Asset Managers have conducted formal assessments of their exposure to emissions intensive investments, with the qualitative responses suggesting higher rates of informal activity in this area.**

Low carbon investments

Global Investor Surveys in previous years captured information on a range of thematic investments that were related to climate solutions. Understanding climate themed investment practices is an important exercise, but interest in exposure to greenhouse gas emissions (GHG) across investment portfolios is gaining greater prominence. At the same time investment community interest in exposure to investments that would be benefit as GHG emissions are constrained is also growing. To better inform these considerations, this year's survey focussed on better defining what should be considered a 'low carbon investment' and seeking clearer reporting on these areas.

To answer the questions in this section of the survey, respondents were asked to apply the guidance outlined in the table below. Specific examples of low carbon investment are indicative, but not exhaustive. The GIC networks will refine these definitions over time with input from investors.

Investments in climate change adaptation, water, waste management and agriculture were not to be considered low carbon investments for the purpose of this year's survey. Although these important investment areas may be considered 'sustainable', 'green' or 'climate themed', as they do not reduce emissions, capture emissions or increase energy efficiency, they did not fit the focus of questions about low carbon exposures.

Low carbon energy generation	Wind, solar, geothermal, wave, tidal, hydro, bio, waste to energy, nanopower, CCS enabled fossil fuel, integrated energy generation
Low carbon and energy efficient technologies	Energy efficient components, fuel-efficient transport, bio-processes, emissions controls, advanced materials
Energy efficient services	Energy efficient buildings, energy and fuel-efficient equipment services
Emissions capture	Emissions sequestering projects with approved carbon credit generating methodologies under UNFCCC
Carbon weighted funds	Where a carbon weighting methodology is consistently applied to underweight carbon exposure in the fund
Other investments	Other low carbon investments where evidence of low carbon characteristics is provided

There were less than 10 responses that provided comments on the low carbon definitions, primarily questioning the exclusion of water, waste management and agriculture. A handful of respondents indicated they may have low carbon exposures, but that they were unable to provide quantified responses. Others provided figures by asset class, but did so with caveats about the accuracy of the dollar figures they provided. These comments and data challenges are not surprising given that analysing low carbon portfolio exposures is a relatively new approach for investors.

60% of Asset Managers and 70% of Asset Owners indicated that they had low carbon investments in their portfolios. The regional split for Asset Owners was very similar but 20% more European Asset Managers indicated that they had low carbon investments than their North American or Australian counterparts.

The number of Asset Owners reporting exposure to low carbon investments in each asset class were as follows: Developed Market Equity (50% of all respondents); Private Equity (46%); Real Estate (38%). Asset Managers had the greatest number of responses to low carbon Developed Market Equity (52% of all respondents), followed by Emerging Market Equity (24%) and Real Estate (20%).

Energy efficient real estate assets had the highest investment value across all asset classes, with lower total values for infrastructure, private equity, listed equity and corporate bonds.

The GIC networks would like to thank those respondents who collated dollar figures for their low carbon exposures by asset class. Partial reporting across the sample and lack of confidence in the accuracy of reported figures by some respondents means that aggregating and reporting low carbon investment values is unlikely to be informative at this stage. A sample comment is provided below.

“While we have exposure to renewable energy, energy efficient buildings and clean technology equity investments, our administrative and valuation systems do not easily allow these values to be extracted. This is particularly relevant to listed equities.”

Australian Asset Owner

Case study 5 Cbus (Australia) Low carbon assessment process

Cbus is an Australian industry superannuation fund with more than 700,000 members, predominantly drawn from the building and construction industry. It was established in 1984 and has over \$21 billion in funds under management. Cbus also directly manages a \$2 billion property company, Cbus Property. Cbus has a diversified asset allocation, the majority is in listed equities followed by real assets, including property, private equity and infrastructure, and some cash and fixed interest.

Cbus took the opportunity to engage their investment managers, surveying them on their low carbon exposures using the Global Investor Survey definitions. This was a significant undertaking across a diversified portfolio, with data responses to be collated across multiple managers within each asset class. Cbus applied a threshold of 50% of a company's revenues coming from low carbon activities in order for that company to be considered a low carbon investment. Managers of real assets and listed managers with more concentrated portfolios could provide exact figures or very reliable estimates of their low carbon investment exposures. Managers of listed equities, with more diversified portfolios found it difficult or were unable to provide accurate data.

The definitions were found to be a very good starting point, particularly for real assets, and it was a good exercise to go through with active managers. For next year it is suggested that a slightly different approach is developed for listed equities, which ideally sets an agreed threshold for company carbon emissions levels and also provides a framework to capture low emitting companies that have a diverse business not immediately obvious as 'green'.

Other potential learnings:

- More time is needed by managers so they can compile the data
- More education on the definitions so that managers can think about how they can collate data would help
- Aggregated or pooled research on proportion of revenues that are low carbon to assist investors may be a good approach for the funds
- Reporting examples of specific low carbon investments in different asset classes would help the investment industry as a whole to improve their approach

Real estate benchmarks

All Asset Managers and Asset Owners with real estate exposures commented on their real estate benchmarks. Different benchmarks are used for building design and for energy efficiency in different regions of the world. However, the most common benchmark used in relation to energy efficiency ratings in Australia was NABERS 4.5 stars. BREEAM, LEED and Green Star Ratings were also mentioned but there was not a common 'minimum standard' suggested in these responses. Many Asset Managers referred to the GRESB survey, noting that this is a tool for assessing the sustainability performance of Asset Managers rather than the emissions intensity of assets.

Carbon capture storage and integrated energy generation

Very few investors could comment yet on their carbon capture and storage exposures in their portfolios. This is understandable, given the relatively low levels of CCS that is operating commercially. Nor were respondents able to report on the percentage of integrated energy generation in their portfolios. In future, investors having the confidence to report on the energy assets in their portfolios will be a good signal of progress in investment practice.

Exposure to emissions

The survey did not seek to provide guidance or a benchmark for emissions intensive assets, but questions examining investor practices in assessing these exposures to emissions in their portfolio proved an interesting exercise with a number of comments about how respondents are measuring and reporting in this area, which will contribute to future developments.

While the number of respondents that answered 'yes' to conducting an assessment of their emissions exposure may seem low – 26% of Asset Owners and 30% of Asset Managers – the qualitative responses suggest higher levels of informal activity.

Those who undertook assessments referenced:

- Carbon footprints using research from Ceres, MSCI's Global Industry Classification Standard (GICS), Trucost, Bloomberg, CDP, broker research or undisclosed inputs
- Reviews on emissions intensive sectors and then engagement with managers on carbon scenarios and valuation impacts

Some respondents identified informal industry discussions on 'unburnable carbon' and discussions about the impact on future carbon based asset valuation scenarios. Respondents also noted that detailed analysis was often not undertaken given poor pricing signals and lack of confidence in policy and emissions trajectories, together with limited data and company disclosures. Key challenges faced by investors in understanding their emissions intensive investment exposures included:

- Lack of clarity on which investments should be measured
- Patchy carbon pricing signals
- Limited data, particularly for fixed interest investments
- Inadequate company disclosures
- Limited resources, particularly for Asset Owners with diverse portfolios

Statements from an Asset Manager that has conducted formal assessments, and one that is starting to factor in high carbon exposures informally, are included below.

"Our in-house ESG research team has undertaken an assessment of climate change risk across the listed index and the equity portfolios managed by the internal team. This analysis has considered the impact of a price on carbon, geographical exposure, the ability to pass on costs or reduce emissions, overall portfolio exposure, Value at Risk and 'unburnable carbon' scenarios to assess risk of stranded assets. Energy audits have also been undertaken for various property assets to understand opportunities to improve energy efficiency."

Australian Asset Manager

"We have identified individual companies which are highly exposed to emerging regulation and have active engagement programmes with them. Examples include coal mining companies, oil and gas companies, and companies in the food commodities chain which are exposed to physical risk. This has been done on the basis of an analysis of the materiality of risk, including weight in portfolios. However we have not quantified the proportion of the portfolio affected."

European Asset Manager

Concluding comments

Results indicate that there has been some progress on detailed analysis of portfolio exposure to both 'low carbon' investments and emissions, but further work is needed. If investors' analytical approach is to examine climate risks within asset classes and assets, it may become increasingly important for those investors to be able to identify and interpret the specific climate change risk exposures from investment decisions. Nonetheless, the survey has enabled the testing of guidance on low carbon investments and the differences between unlisted and listed assets in quantifying low carbon exposures. This is a good example of the practice development role the GIC networks can play in progressing standards for the whole industry.

6 Public policy and company engagement

Headlines

- The GIC networks continue to facilitate high-level public policy engagement activities on behalf of their members in each region that the groups operate, despite challenging political environments.
- Direct corporate engagement by Asset Owners has increased by 20% on last year's results, reflecting the importance placed on the activity and the value attributed to active ownership.
- 53% of Asset Managers have made a decision to divest or not to invest in listed equities based on climate change concerns. Examples given for these decisions typically referenced emissions intensity.

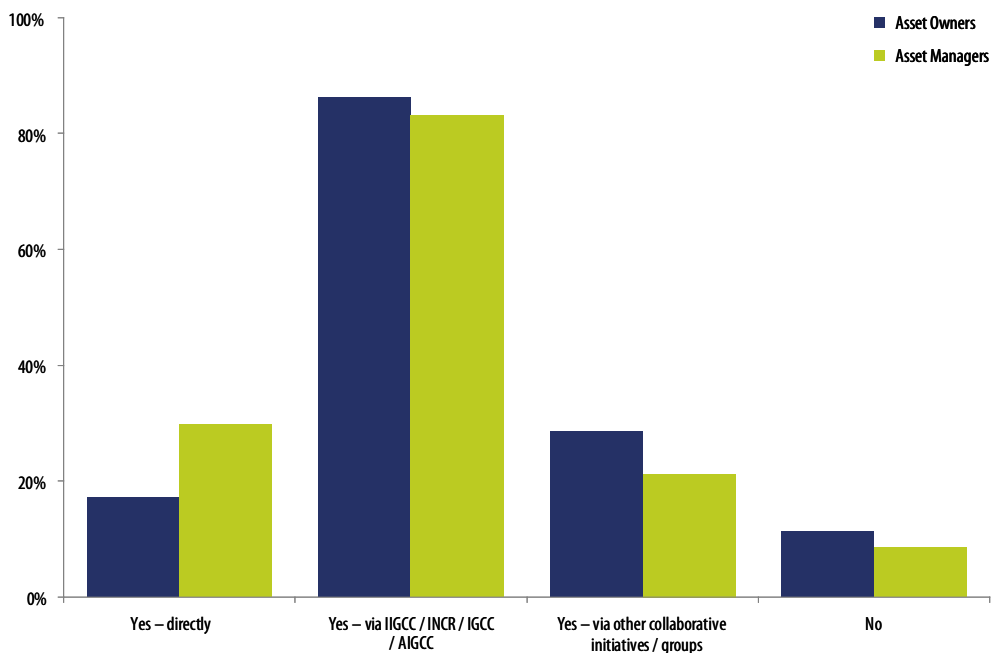
Investor engagement on climate change takes place on two fronts – public policy and at the company level. Whilst company engagement has historically been the focus of most investor attention, increasing effort is being applied to engaging public policy makers at the national, regional and international levels. This chapter considers investors' engagement efforts in both arenas.

Investor action on public policy

Public policy engagement is important both to minimise the expected physical and economic impacts of climate change and because well designed and implemented climate policy is essential for promoting investment in the markets for clean energy, energy efficiency and related technologies.

Engagement with policy makers remains a valuable tool for institutional investors in encouraging the development of policy related to climate change and only 11% of Asset Owners and 9% of Asset Managers did not engage with policy makers on climate change.

Figure 7 Investor engagement with policy makers



The GIC networks continue to facilitate the majority of public policy engagement for respondents – 83% of Asset Managers and 86% of Asset Owners stated that they predominantly use the networks for public policy engagement. This can be attributed to the ongoing success of the investor networks in influencing public policy development and a preference for collective action on policy issues.

In contrast, participation with other collaborative initiatives as a method for engaging policy makers on climate change remained steady at 29% for Asset Owners and 21% for Asset Managers. Asset Managers were most likely to engage directly, with 30% engaging this way, as compared to Asset Owners at 17%. This is not surprising given direct engagement requires resources and time, and therefore collaborating with other investors is more likely to be successful due to their collective size and influence.

Following the 2011 Global Investor Statement and report calling for ‘investment grade’ climate and clean energy policies, signed by 285 global investors, the GIC networks and partners UNEP FI and PRI sent a joint letter to the governments of the world’s largest economies in November 2012. This letter renewed the call for clear, consistent and predictable national, regional and international climate and clean energy policies to avert catastrophic climate change and to facilitate low carbon investment at the necessary scale.

More detailed examples of how each of the more established investor networks undertook public policy engagements during 2012 are highlighted below:

IIGCC – Europe

- IIGCC engaged with the EU Commission and national governments on regulations which impose unintended barriers to investment in low carbon infrastructure, including uncertainty around the draft Solvency 2 rules and the unbundling provisions in the EU’s Third Energy Package. The latter require investors to choose between investing in either the energy generation or transmission sector. The Commission recently released some guidance acknowledging the negative effects that ‘unbundling’ legislation could have on energy investments by institutional investors in Europe.
- IIGCC has highlighted investor support for a strong carbon price signal and commitment to addressing the oversupply of allowances in the EU Emissions Trading Scheme through statements and letters. Forming alliances with industry, IIGCC has maintained an ongoing dialogue on the issue with national and European policy makers.
- IIGCC, through its network of European real estate investors, developed a statement on enhancing the regulatory framework in the property sector in order to support better incentives for investing in energy efficiency. Members used the statement to contribute to the dialogue on the Energy Efficiency Directive, which was approved by EU member states in October 2012.

IGCC Australia / New Zealand

In addition to ongoing policy advocacy in the area of carbon pricing and carbon markets, IGCC worked in the following areas in 2012:

- **Energy Policy:** IGCC engaged with the Climate Change Authority and the Federal Government on energy market design and renewable energy policy. IGCC contributed to public debate and made two formal submissions: to the Review of the Renewable Energy Target Scheme, September 2012 and Draft Energy White Paper 2011 – Strengthening the Foundation for Australia’s Energy Future, March 2012. The Climate Change Authority drew largely from IGCC’s contribution when formally recommending no reduction to the 2020 Renewable Energy Target of 20%, in the interests of supporting the confidence of investors in renewable energy markets.
- **Climate Finance:** IGCC was a leading contributor to the design and development of the Clean Energy Finance Corporation (CEFC) in Australia, through its Low Carbon Finance Working Group. IGCC

supported the proposal to develop the CEFC during government policy deliberations and through a key submission: Submission to the expert review panel on the design of the Clean Energy Finance Corporation, January 2012, assisted with the design of the CEFC. IGCC is a regular contributor to public debate on the need for climate co-financing vehicles.

- **Climate Change Adaptation:** IGCC commenced a new work stream on climate adaptation in 2012 to address barriers faced by investors to incorporating analysis of physical climate risks into investment decisions. Among IGCC's contributions were submissions to two Productivity Commission reports: Regulatory and Policy Barriers to Effective Climate Change Adaptation, January 2012 and the Draft report on Barriers to Effective Climate Change Adaptation, June 2012. One result of this work to date is the formation of a network of practitioners and academics, with the support of the Australian National University to address information and methodological gaps that make it more difficult to incorporate climate impacts and adaptation into investment decision making.

INCR – North America

- INCR members engaged with members of the U.S. Congress in support of an extension of the Production Tax Credit (PTC), a key incentive for wind energy development. The PTC was extended for one year through 2013.
- INCR members submitted comments to the U.S. EPA in support of proposed regulations that would limit greenhouse gas emissions from new power plants. These regulations have not been finalised, and are being revised by EPA, which also plans to issue regulations for existing power plants.
- INCR members engaged with the U.S. Securities and Exchange Commission (SEC) to urge greater implementation of the Commission's 2010 climate disclosure guidance, in an effort to improve climate risk disclosure by U.S. listed companies.
- INCR collaborated with Oxfam and Calvert Investments in preparing a research report entitled "Physical Risks from Climate Change: A Guide for Investors on Disclosure and Management of Climate Impacts" (May 2012), examining the economic impacts from extreme weather events in 8 key sectors, which was shared with key U.S. policymakers.
- INCR members engaged with members of the U.S. Congress opposing legislation that would have effectively rescinded U.S. EPA regulations of mercury and other toxic air pollutants from electric power plants (regulations that also effectively reduce greenhouse gas emissions from coal fired power plants and are thus a climate policy priority for INCR). The proposed legislation was defeated in the U.S. Senate, and the regulations remain in effect.

Raising company standards

The majority of investors continue to conduct corporate engagement (i.e. dialogue with their investee companies) in an effort to influence corporate strategy or behaviour. Historically, such dialogue has focused on the listed equity portion of portfolios. However, investors are increasingly exercising their ownership rights within asset classes such as private equity and real estate, which provide similar rights of ownership and therefore influence.

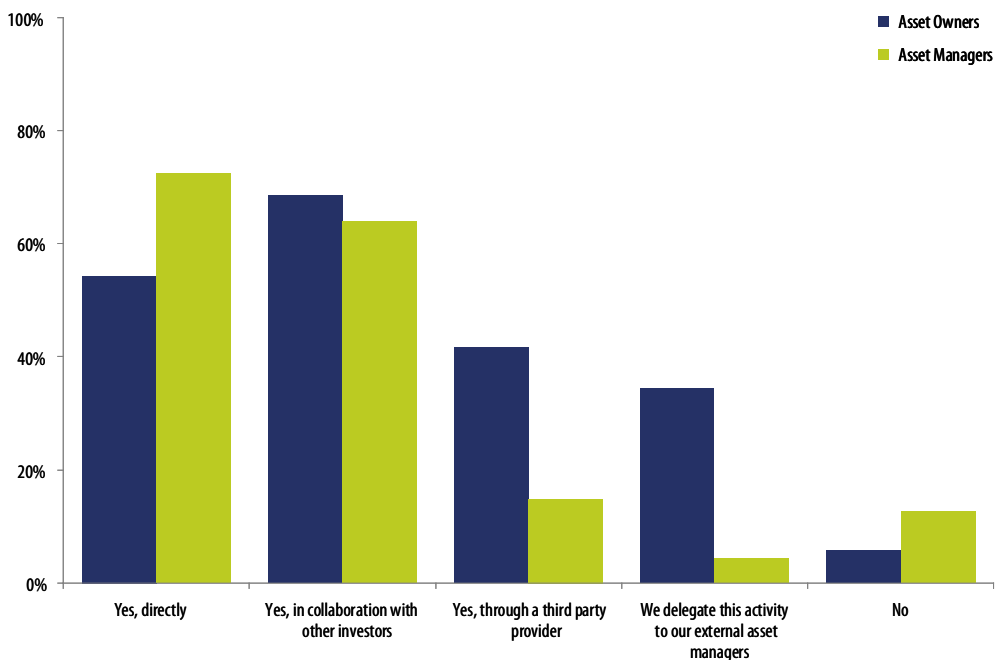
While there were a smaller number of Northern American responses, relative to other regions, the Asset Owner respondents were all consistently active in direct and collaborative company engagement. European and Australian/New Zealand responses showed a lower proportion were engaging with companies, but across a larger number of respondents, with collaborative engagement (71% and 63% respectively) and direct engagement (50% and 44% respectively). Direct engagement by Asset Managers was at 77% for European respondents, 71% for Australian/New Zealand respondents and 63% for North American respondents.

Company engagement in the U.S.

INCR members engaged with numerous U.S. listed corporations in 2012 on issues relating to climate and clean energy risks and opportunities. This included direct engagement and the filing of shareholder proposals. INCR members filed over 100 shareholder proposals that asked companies to set targets to reduce their GHG emissions, report on their GHG reduction efforts, improve their energy efficiency or increase their use of renewable energy. Approximately 40% of these resolutions were withdrawn by agreement on the basis that the company agreed to take actions requested by the investor.

Not surprisingly, engagement approaches with companies differ between Asset Managers and Asset Owners. Asset Managers typically engage directly with investee companies (72%) and to a lesser extent in collaboration (64%). Asset Owners are more likely to engage collaboratively (69%) than directly (54%). Given only the very largest Asset Owners have large enough equity stakes in their portfolio companies to have an influence – pooling assets and resources is therefore understandable. However, direct engagement by Asset Owners has increased by 20% on last year's 34%, which reflects the importance placed on the activity and the value attributed to active ownership by Asset Owners.

Figure 8 Investor engagement with companies



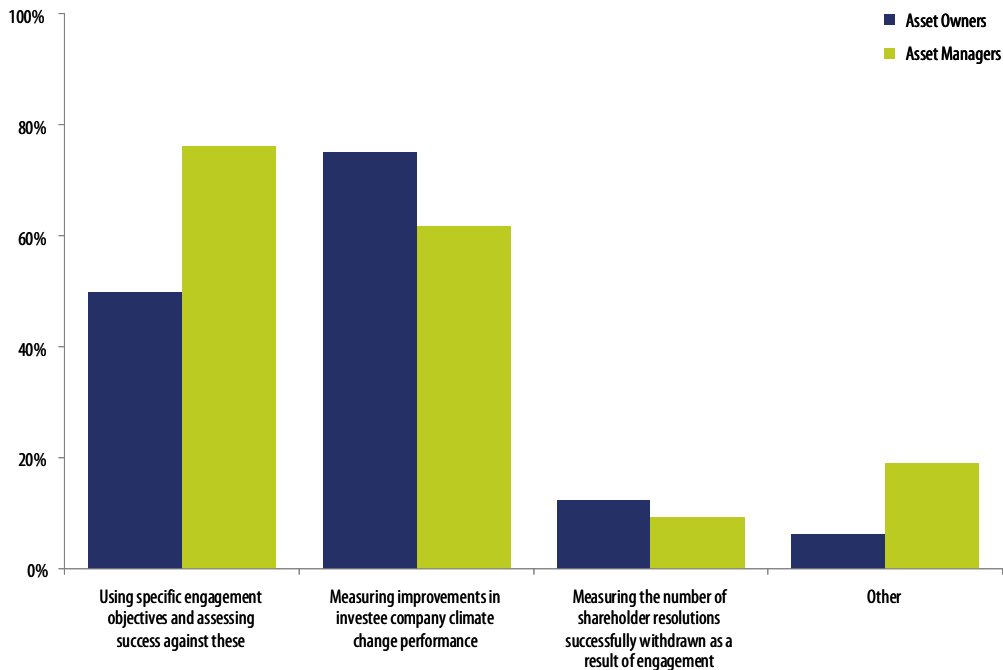
Respondents were asked about the issues on which they engage with companies (governance, strategy, goals, implementation, emissions inventories, disclosure, public policy) and the methods they use to do it (directly, collaboratively or via proxy voting).

Public policy was the issue most cited by Asset Owners as the subject of their company engagement. Collaborative platforms were most often used (86%) although 34% of Asset Owners also raised public policy issues directly with companies. Disclosure and governance were the second and third most important issues.

Company strategy was the issue most often raised by Asset Managers with companies, with 70% reporting that they did so directly. Emissions goals were the second most often raised issue with governance and public policy equally third.

Assessing the effectiveness of engagement is an important part of the process and more than 40% of both Asset Owners and Asset Managers have undertaken an assessment. This was primarily measured as an improvement in a performance measurement or against specific engagement objectives. A summary on the methods used is provided below.

Figure 9 Methods used to assess effectiveness of corporate engagement

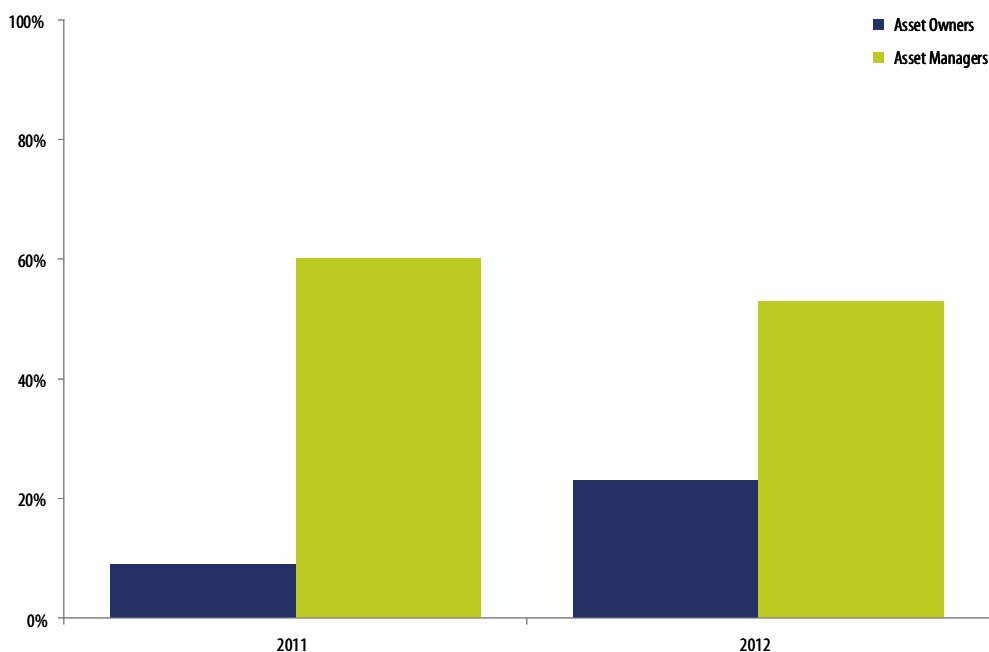


Divestment or electing not to invest

In some circumstances concerns related to climate change will lead to an investment not being made or an existing holding being divested. The headline result for Asset Managers taking such decisions is 53%. Data was not collected on the extent to which these decisions applied only to only select funds or asset classes, rather than across portfolios and so it is not clear whether these decisions related to specific thematic or mainstream funds. Nevertheless, the result indicates that tools to examine the emissions exposure of companies and assets do exist in the Asset Manager community. Practices in this area need more detailed exploration in future years.

The number of Asset Owners reporting that climate concerns had led to an investment being avoided or a divestment being made increased to 23% in 2012 (from 9% in 2011). The underlying data indicates that both those with explicit sustainability or climate change thematic approaches or “ethical screens” and “mainstream pension funds use this approach. The degree to which these practices apply across portfolios is an area for further examination in future. The respondent comments below indicate that these decisions were taken in listed and unlisted equities, real estate and infrastructure portfolios.

Figure 10 Divested from or chose not to invest in a company's equity on concerns related to climate change



Comments from Asset Managers or Asset Owners that have explicit sustainability or climate change thematic approaches or ethical screens are outlined below.

"We regularly choose not to invest in a company if its profile means that it does not generate at least 50% of revenue, profit or assets from clean energy or energy grid/storage efficiency operations."

Australian Equity Manager

"Starting in late 2012, we divested from companies for which the majority of operations were in the tar sands, as well as utilities whose reliance on coal was greater than the national average. We also stated that we would not invest in coal companies."

North American Equity Manager

"For our funds which take into account long term ESG related risks as part of the fund's mandate and investment style, pure play investments in thermal coal have been deemed non-investable due to long term regulatory and other risks associated with climate change and carbon pricing."

Australian Equity Manager

"We divested from a company when we came to the conclusion that they were no longer part of the transition to a low-carbon economy as their portfolio of carbon-based fuels/assets began to rise materially."

European Equity Manager

“As a result of the carbon footprint – managers for both equity and bonds specifically identified companies to exit from the portfolio due to the excessive carbon risk relative to peer group.”

European Asset Owner

We have also included comments from ‘mainstream’ Asset Owners and Asset Managers that are indicative of the reasons given for investment actions being taken by a broad range of investors.

“Decisions have been situation specific based on energy efficiency, regulatory changes and quality of management in general.”

North American Equity Manager

“While our Managers highlighted that a company’s actual or potential exposure to a cost of carbon is only one of numerous factors considered when making their investment decisions, a number provided examples of where it influenced their decision making to underweight or divest a company (more commonly underweight).”

Australian Asset Owner

“We are highly unlikely to participate in unlisted equity investments that are high carbon.”

Australian Asset Owner

“Our infrastructure and property managers have made decisions not to invest in particular assets based on climate change concerns.”

Australian Asset Owner

Four case studies are provided below outlining specific engagement examples by respondents.

Case study 6 The California State Teachers' Retirement System (CalSTRS) (USA) – Engagement on energy efficiency

The California State Teachers' Retirement System, with a portfolio valued at \$163.7 billion as of March 31, 2013, is the largest educator-only pension fund in the world. The CalSTRS Corporate Governance Unit engages corporations, regulators, policy makers, and fellow investors on a variety of sustainability issues with the goal of increasing the level of awareness and importance that the global investment community places on sustainability considerations. The Unit also leads the Green Initiative Task Force, which is an internally staffed team that incorporates all asset classes of the CalSTRS Investment Office. The mission of the Green Initiative Task Force is to manage the risks and capture the opportunities associated with climate change and other environmental issues by identifying environmentally focused investments and risk mitigation strategies intended to enhance the risk-adjusted returns of the overall CalSTRS portfolio. As part of the sustainability risk management effort, CalSTRS has incorporated ESG risks into its 21 Risk Factor framework, which identifies risks considered by staff and external managers as part of the investment decision making due diligence process.

Of particular note for this case study is an initiative CalSTRS has undertaken focusing an ESG-related opportunity to improve investment outcomes. In 2013, CalSTRS filed shareholder resolutions with a number of companies, including Walter Energy, Inc., FLIR Systems, Inc., Fiserv, Inc., Electronic Arts, Inc., Dun & Bradstreet Corp., and Citrix Systems, Inc., concerning the companies' energy efficiency efforts. The resolutions, which pressed for increased energy efficiency planning and reporting, were a follow-up to a letter that CalSTRS sent to 100 companies in mid-2012, which asked for increased disclosure on energy management practices and outlined CalSTRS belief that investments in energy efficiency are an attractive way to curb volatile energy costs, can help companies respond to potential regulations, and can enhance a company's role as a corporate citizen.

Resolutions for five of the six companies mentioned above were withdrawn following engagement with CalSTRS with the outcome that the companies will address energy efficiency in their planning and reporting processes in the future.

Case study 7 The Church of England National Investing Bodies (UK) – Climate Change policy and engagement

The Church of England National Investing Bodies ("the Bodies") comprises the Church Commissioners for England, the Church of England Pensions Board and the CBF Church of England funds. The bodies are responsible for the management of approximately US\$12 billion of assets.

The Ethical Investment Advisory Group (EIAG) conducts engagement and oversees proxy voting on behalf of the Bodies. For example, it is part of the "Aiming for A" initiative led by CCLA which, through detailed engagement with the ten largest UK utility and extractive companies, is encouraging improved disclosure of carbon emissions and related mitigation measures.

The EIAG also advises the Bodies on ethical investment issues and, to facilitate this, produces policy recommendations informed by both investment and theological perspectives. For example, throughout 2012 the EIAG worked on a detailed policy on executive remuneration, which it published in April 2013. This policy included the requirement that variable pay proposals would only be supported if they included some form of ESG-related targets.

Also in 2012, the EIAG began a comprehensive review of its climate change policy recommendation, which was previously based on IIGCC guidelines. Analysis is focusing on three areas: a summary of the scientific consensus on climate change; analysis of climate policy on a global and regional scale, and corporate responses to it; and a survey of the actions open to investors. A third-party expert has been commissioned to undertake this research. The EIAG expects possible outputs from this process to include specific positions on both portfolio carbon emissions measurement /management and engagement with companies and public policy makers.

Case study 8 Pax World Management LLC (USA) – Climate Change policy and proxy voting developments

Pax World Management LLC, the investment advisor to Pax World Funds, practices the full integration of ESG factors into investment analysis and decision making. Pax offers a range of funds, including the Global Environmental Markets fund, which has been fossil fuel free since inception. Pax is currently in the process of benchmarking its five largest equities funds' carbon intensity relative to their passive benchmarks (Pax World Balanced Fund, the Pax World Growth Fund, the Pax World Global Environmental Markets Fund, the Pax World International Fund, and the Pax World Global Women's Equality Fund). Pax intends to then establish quantitative targets for reducing/managing each fund's carbon intensity over time, including funds that are already less carbon intensive than their benchmarks, and report publicly on progress toward those targets. Trucost is performing this benchmarking.

Of particular note for this case study, Pax has recently updated its approach to investing in fossil fuels, based on its belief that addressing climate change risk and mitigating greenhouse gas emissions within portfolios are crucial objectives for investors. The updated approach includes a policy to avoid companies whose businesses depend on producing fossil fuels at the dirtier end of the spectrum in terms of GHG emissions. This partial divestment policy includes coal companies, companies that get a majority of their revenue from oil produced from tar sands, which are far more carbon intensive than other fossil fuels. Pax also avoids investing in utilities whose reliance on coal to produce electricity is above the relevant national average and that have not demonstrated a commitment to renewables.

In addition, Pax has updated its proxy voting policy to reflect that it will withhold proxy votes from, or vote against, the chairman of the governance or risk committee of any fossil fuel company that does not address the risks that public policies will create a "carbon bubble," or stranded assets of fossil fuel reserves that cannot be burned prior to 2050, or alternatively, address the physical risks to the business of global warming that exceeds 2 degrees Celsius. If the company does not have a risk or governance committee, Pax will withhold votes from or vote against the full board chair for such companies. Pax sends the companies letters after the annual meeting to explain why it voted as it did.

During 2013 Pax wrote to eight companies (Xcel, Time Warner Cable, Emerson Electric, Occidental Petroleum, Allergan, Pfizer, CenturyLink, and American Express) expressing support for companies' policies on clean energy and asking that they reconsider their membership in the American Legislative Exchange Council (ALEC) due to that organization's attempts to roll back renewable portfolio standards for electricity generation. Pax considers this type of engagement activity central to its updated approach to addressing risks associated with a carbon bubble.

Case study 9 The Unitarian Universalist Association (USA) – Climate Change policy and engagement

The Unitarian Universalist Association (UUA) is a faith community of more than 1000 self-governing congregations that bring to the world a vision of religious freedom, tolerance and social justice. The Association is a relatively small investor compared to many INCR members. External investment firms and a general consultant help the UUA manage its \$150m in assets. Approximately 15% of the assets are invested in hedge funds and risk parity with the rest in listed equity and bonds. Primarily, due to the structure of the Association and requirements of its members, private equity and real asset investments are not currently part of the asset allocation.

The UUA recognizes climate change as an investment risk. Managers with ESG expertise are sought for all searches though the Association has not found ESG expertise available for its hedge fund and all global allocation investments. The UUA has long been an active shareholder and participant in Ceres, INCR, ICCR and CDP. In 2013 the UUA was primary filer on 6 shareholder resolutions, 2 related to climate change. The results of both are pending. In 2012, the Association filed 8 resolutions with 2 related to climate change – dialogue is ongoing with both companies, SunTrust Bank and Alpha Natural Resources. Alpha Natural Resources is also the subject of one of the 2013 resolutions related to disclosure to shareholders of the risk of the company's coal resources being “stranded” or facing a drastic decrease in valuation if carbon emissions were to be regulated or priced.

The ‘stranded assets’ concept follows research by the Carbon Tracker Initiative, which has been used by 350.org to promote a fossil fuel divestment campaign. Originally targeting college students and endowments, the campaign has spread to municipalities, foundations, and faith-based institutions such as the UUA. The issue was raised by members of the Association and the UUA was tasked with evaluating the campaign and potential responses. With limited staff the UUA stepped up efforts to get its consultant involved in identifying and monitoring risks and investment opportunities associated with climate change using the Carbon Tracker Initiative as a catalyst and guide. The consultant provided information on the Association's fossil fuel exposure and risks associated with divestment. UUA is also working with its consultant to evaluate possible allocations to climate change solutions and environmentally themed strategies which make positive investments companies seeking to mitigate the effects of climate change or facilitate adaptation. The UUA has reviewed the relevant information and the topic will be discussed at upcoming meetings of the Association.

Concluding comments

In a world of nationally based responses to climate change, the regional focus of the GIC networks is a key strength. Collaboration between the GIC networks to share and propagate positive climate policies between regions appears to be a significant opportunity for the GIC in coming years.

Engagement with companies on climate change risk remains a core element of investor responses. The results in this chapter are consistent with earlier results that indicate climate risk management is conducted within asset classes and in the case of equities portfolios, by seeking risk management activities from investee companies.

Discussion of divestment provokes important questions over the adequacy of company engagement to address some climate risk exposures, especially as inadequate public policies may constrain the effectiveness of company engagement in some circumstances. Divestment or avoiding investments in emissions intensive companies is identified in the results as an activity that a number of investors have undertaken. Understanding how pervasive this approach is requires more analysis in future years. Importantly, the results indicate that tools for understanding investment exposures exist and are being used by many investors.

7

Selection and monitoring of external managers

Headlines

- **Most Asset Owners in this year's survey (83%) consider the extent to which managers integrate climate change into their investment process and ownership activities and 69% indicated that it influenced their selection decision (up from 43% last year).**
- **Climate change issues are included in due diligence processes, interviews and criteria in Requests for Proposals (RfPs) but not yet half of the respondents (43%) included this in new Investment Management Agreements (IMAs).**
- **In 2012, 63% of Asset Owners (up on last year's 53%) monitored their existing Asset Managers on climate change integration. Only 23% of Asset Owners have set clear expectations of their existing managers on climate change in their IMAs.**

This chapter considers the responses of Asset Owners that employ external Asset Managers on whether and how they include climate change considerations in manager selection and monitoring processes. Year on year response results indicate improvements and that better practices are gradually working throughout the investment process; although there are still gaps evident in some areas, such as climate change being incorporated into Investment Management Agreements.

New appointments

Most Asset Owners in this year's survey (83%) consider the extent to which managers integrate climate change into their investment process and ownership activities. This is up marginally on the previous year's 78%.

Figure 11 Considering climate change integration in new manager appointment

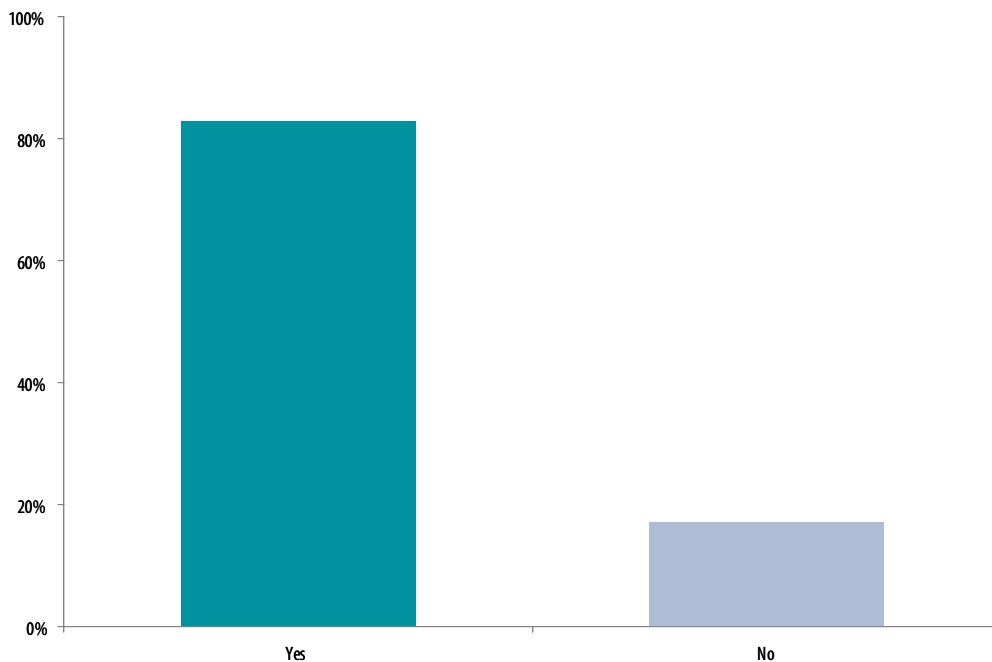
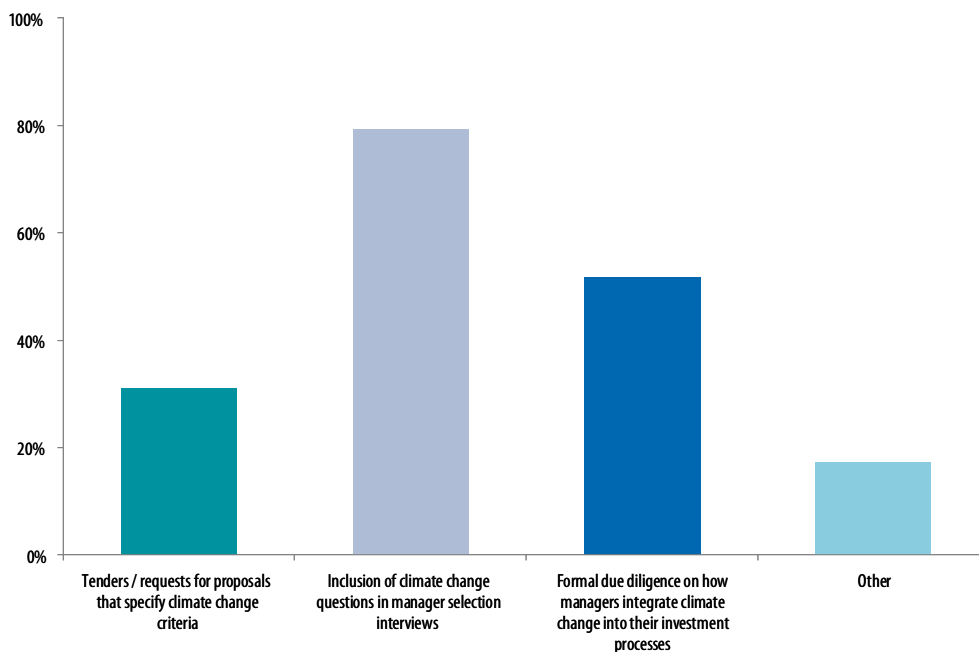


Figure 12 Methods of assessing manager’s climate change integration



In most cases Asset Owners are considering climate factors alongside other ESG issues – especially for standard mandates (such as a global equity strategy). However, considering climate as an issue in selection processes does not translate into the final decision being based on the level of climate integration by a given manager.

69% of Asset Owners stated that manager selection decisions are influenced by climate change integration, up from 43% last year. However, only 40% of Asset Owners included climate change criteria in the Investment Management Agreements (IMAs) for new mandates.

Comments indicate that it is typically one of many ESG issues that are considered for most mandates i.e. climate change criteria in isolation are unlikely to tip the balance or receive a significant weighting relative to other criteria. That said, for specific mandates climate change is more central to manager selection – for example energy intensive assets such as property and infrastructure or for ‘themed’ funds such as cleantech and renewable energy.

The quotes from Asset Owners responding to this year’s survey help to illustrate the approach taken by those including climate change criteria in their agreements for new mandates.

“All our new Investment Management Agreements (IMAs) require fund managers to be aware of and to have regard to our ESG Policy which specifically refers to climate change. New IMAs also include specific requirements related to environmental, social and governance factors, which includes climate change such as reporting. IMAs for climate change related investments include a range of specific climate change requirements. For example, one includes a requirement that the portfolio have fifty per cent less carbon emissions than an equivalently sized portfolio invested in the benchmark, subject to the investment constraints.”

Australian Asset Owner

“In our new IMAs with managers, they are asked to report on a 6 monthly basis on a quantitative review of climate change and ESG risks in the portfolio. They are to also provide case studies where climate change and ESG issues are impacting investment decisions and advise on any changes to their approach to implementing climate and ESG in their investment decision making”.

Australian Asset Owner

Monitoring existing managers

Whilst it is important to factor climate and other ESG issues into mandate construction at an early stage, most owners are not starting with a blank page i.e. they are attempting to retrospectively integrate climate or ESG issues into *existing* mandates and assets. Ongoing manager monitoring is therefore a critical part of the picture.

In 2012, 63% of Asset Owners (up on last year’s 53%) monitored their existing Asset Managers on climate change integration. This was most likely to happen during regular monitoring meetings, with the figures on more tangible reporting or assessments still relatively low.

Figure 13 Investor monitoring of climate change integration for existing managers

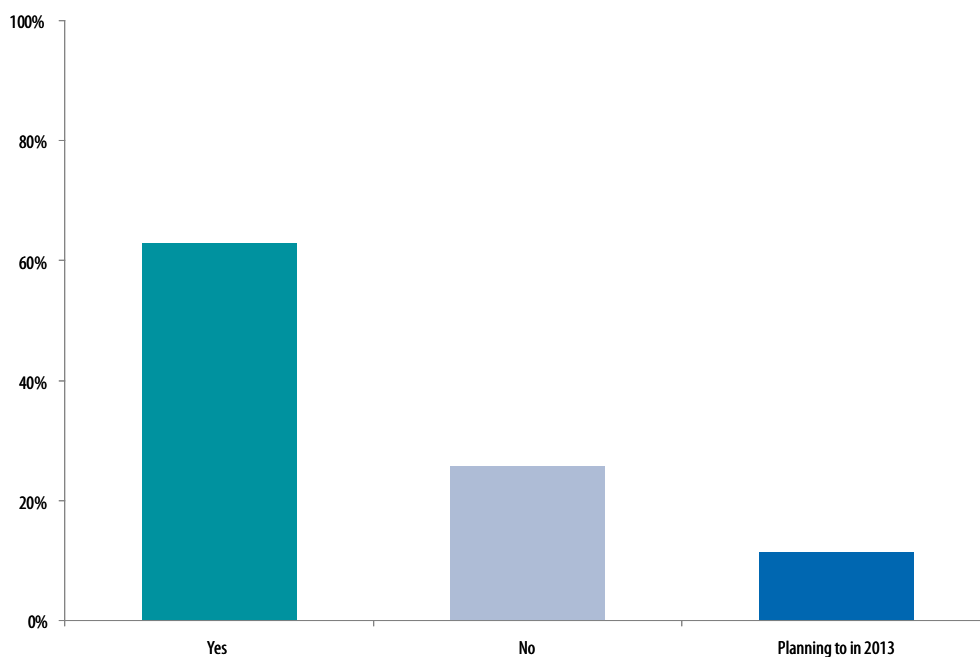
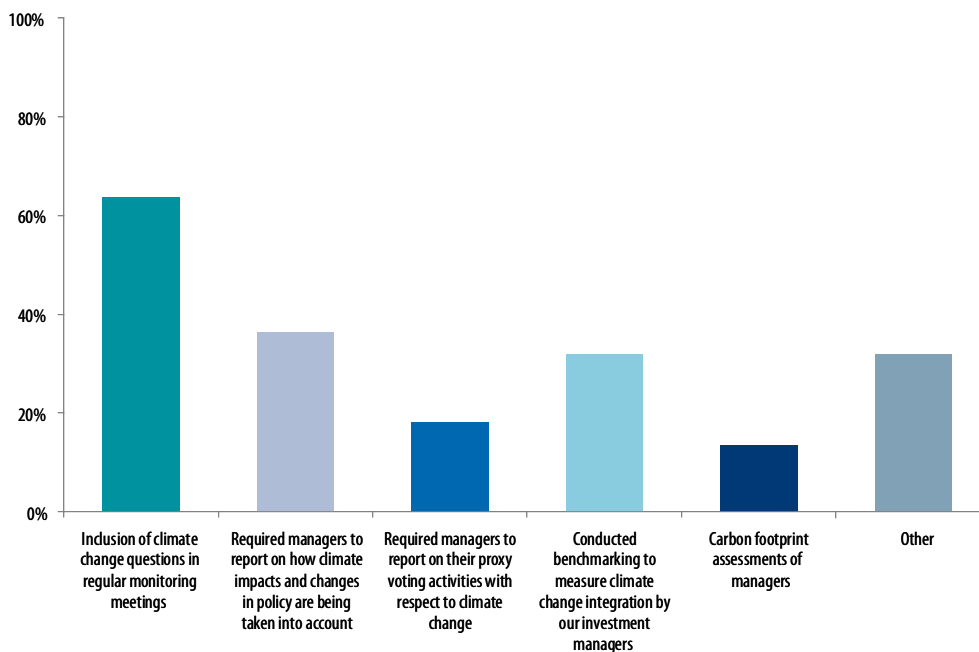


Figure 14 Methods of monitoring managers' climate change integration



Considered as a proportion of the responding Asset Owners in their region, North American investors (80%) and Australian/New Zealand investors (70%) were more likely to monitor their managers on climate change in 2012 than European investors (50%). These are similar regional differences to the previous year, but there has been an increased overall 'yes' response.

It is perhaps surprising to see that only 23% of Asset Owners have set clear expectations of their managers, although this is up slightly on last year's 18%. One explanation for this apparent gap is that establishing clear expectations on climate (or other ESG) issues only comes after experience has been built up on what is possible and desirable, and is the end point in a lengthy process.

Figure 15 Setting clear expectations in agreements with existing managers

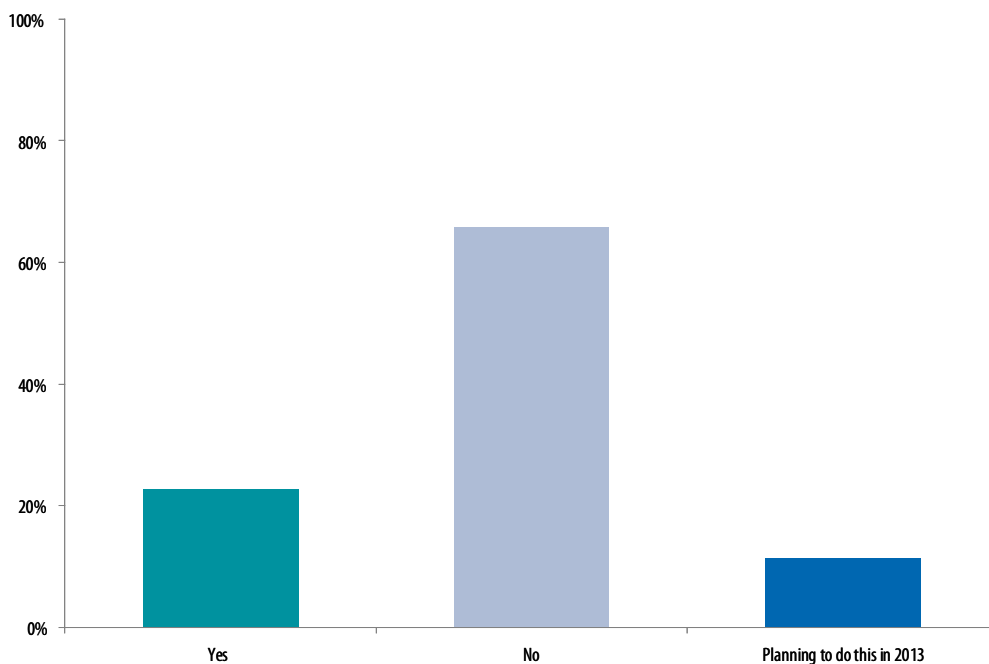
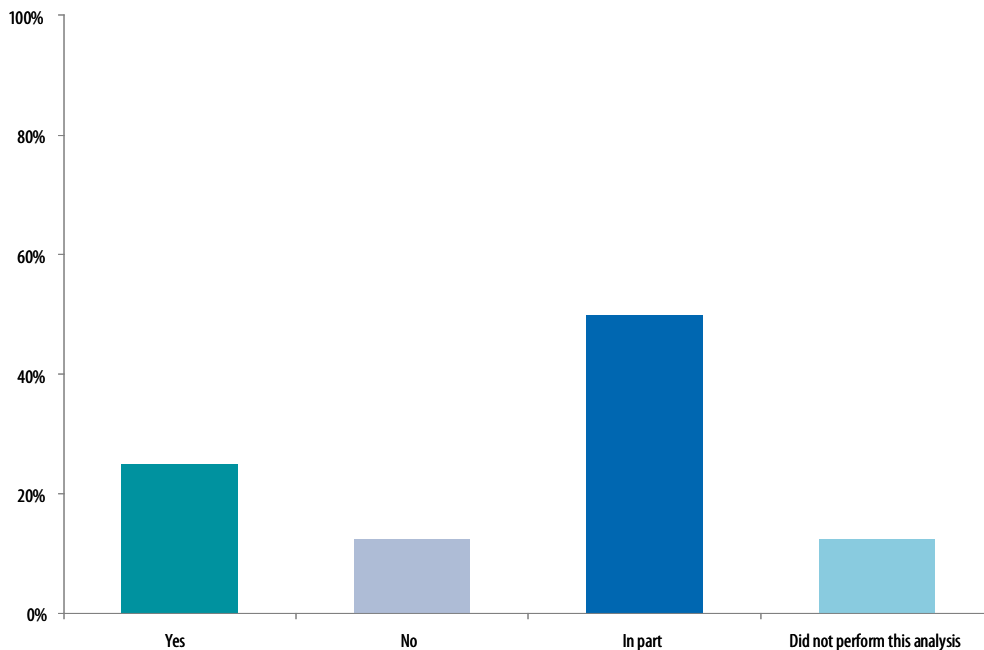


Figure 16 Satisfaction relative to expectation



Concluding comments

Each year practices around selection and monitoring of external managers improve. There is every reason to expect that practices will continue to improve in future as climate risks intensify and responses become more sophisticated. As only 23% of IMAs currently contain clear expectations on climate change and only 43% of new IMAs are seeing these details included, there appears to be an opportunity to improve the clarity of expectations on climate risk management between Asset Owners and Managers. Setting clear expectations in new agreements and following regular reviews of Asset Management practices will improve the outcomes of oversight processes for all parties and will deepen climate change integration.

Headlines

- In 2012 there was a substantial amount of climate related activity by real estate Asset Managers in particular in relation to on-site building improvements. They covered a wide variety of activities, but the key focus was on energy efficiency, and then waste and water management. There was also a strong indication that this activity was expected to continue or increase in 2013.
- Responses on asset classes outside real estate were more limited, but more than 50% of internally managed infrastructure assets were monitored for climate change risks.
- Just over a third of Asset Managers responding to the infrastructure questions elected not to invest or divested from an infrastructure investment due to climate change concerns.

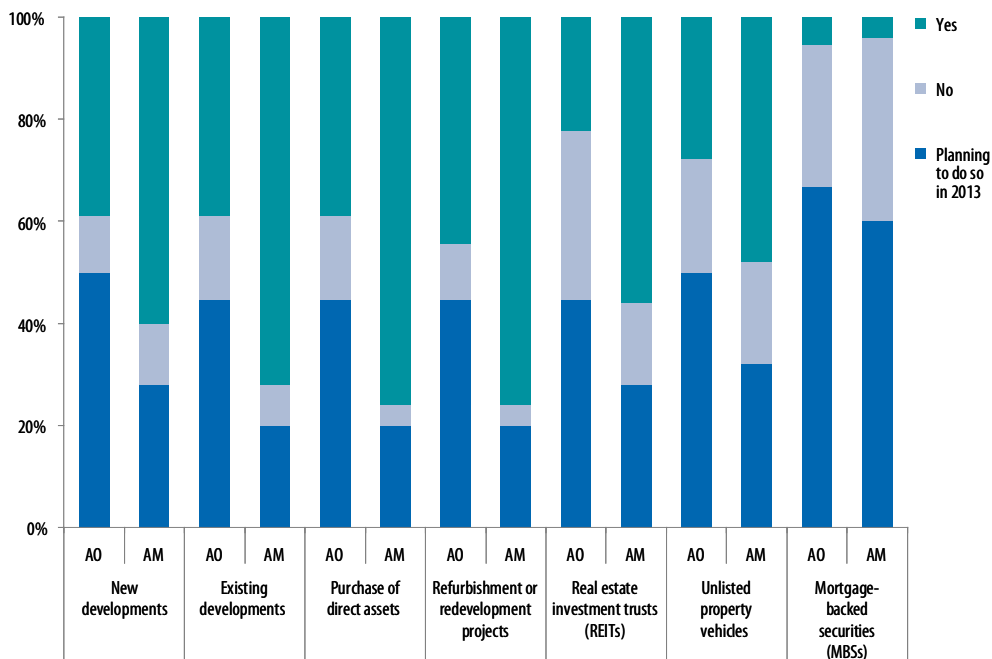
This chapter focuses on the integration of climate change issues into the investment processes by Asset Managers and Asset Owner internal teams across their real estate (most detailed), infrastructure, and commodities portfolios.

Real estate

General activities

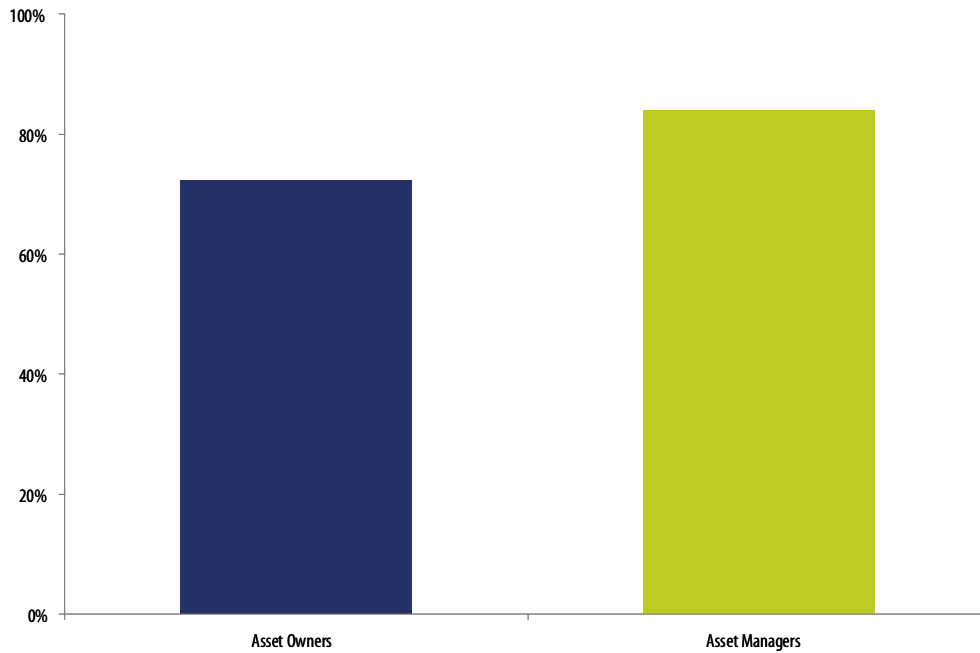
The greatest integration activity is currently underway in direct assets, particularly in refurbishment and existing developments for Asset Managers and in a similar ratio but to a lesser extent for Asset Owner internal teams. There is also a strong positive response across the board regarding intentions to do more over the following twelve months.

Figure 17 Climate change factors considered in developing, selecting, managing real estate assets



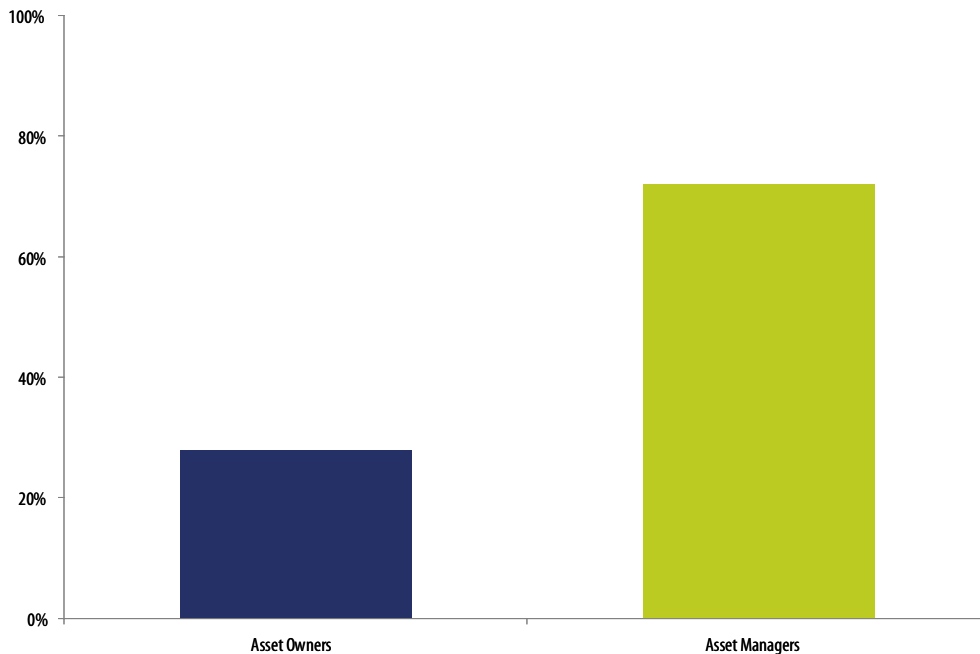
Leveraging standards or certifications is an important part of the process for a substantial majority of both Asset Managers and Asset Owners.

Figure 18 Considering compliance to standards or certifications



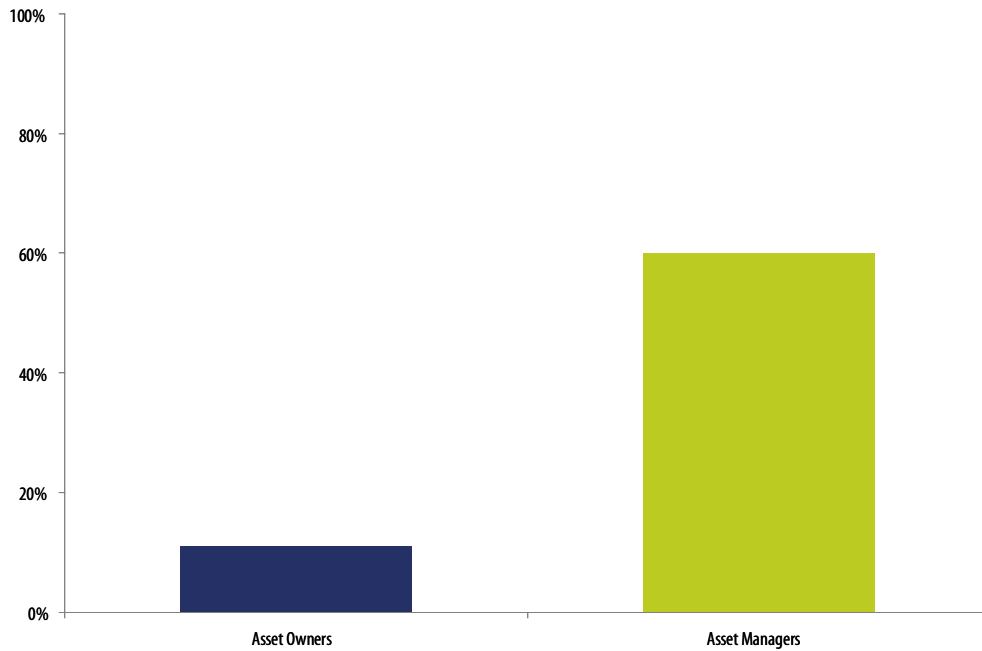
The setting of climate change related targets for directly managed real estate was reported predominantly by Asset Managers but less so by Asset Owner internal teams.

Figure 19 Have climate change targets for directly managed real estate



It was also the Asset Managers that were most likely to divest or elect not to invest in real estate due to climate change concerns.

Figure 20 Divested from / elected not to invest in real estate due to climate change concerns



Activities specific to 2012

In 2012 there was a substantial amount of activity by Asset Managers in particular in relation to on-site building improvements. They covered a wide variety of important activities, but the key focus was on energy efficiency, and then waste and water management.

Figure 21 On-site building improvements, retrofits or other energy or climate related activities

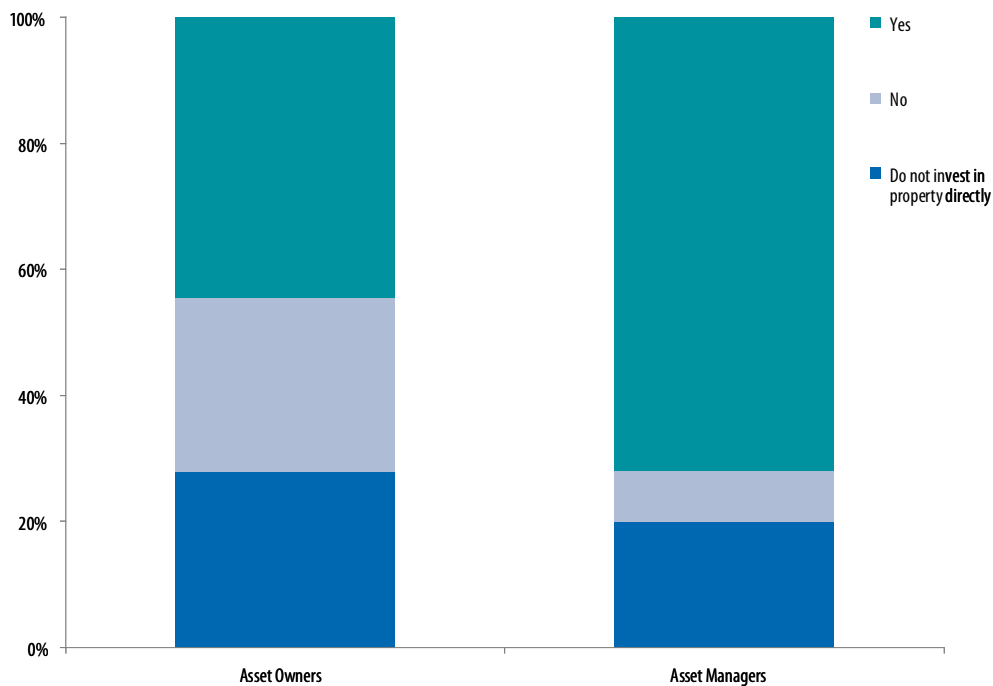
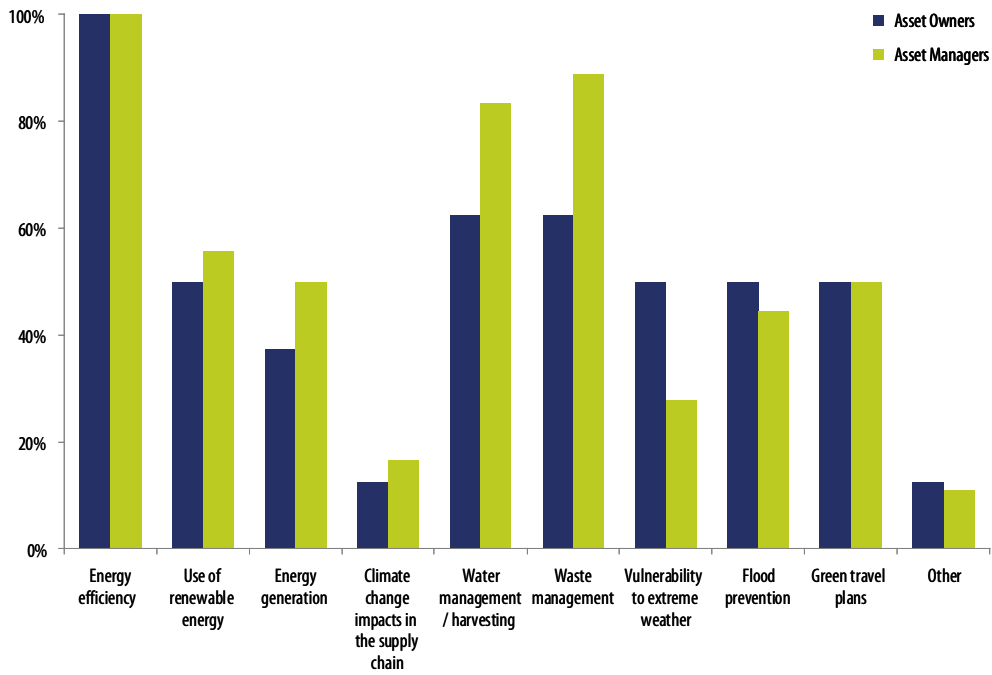


Figure 22 Onsite activities covered



In 2012 the engagement focus was on fund managers, asset managers and tenants, particularly by Asset Managers. The majority of Asset Managers were also active in global or regional sustainability benchmarks.

Figure 23 Engagement with real estate professionals to reduce climate change impact on investments

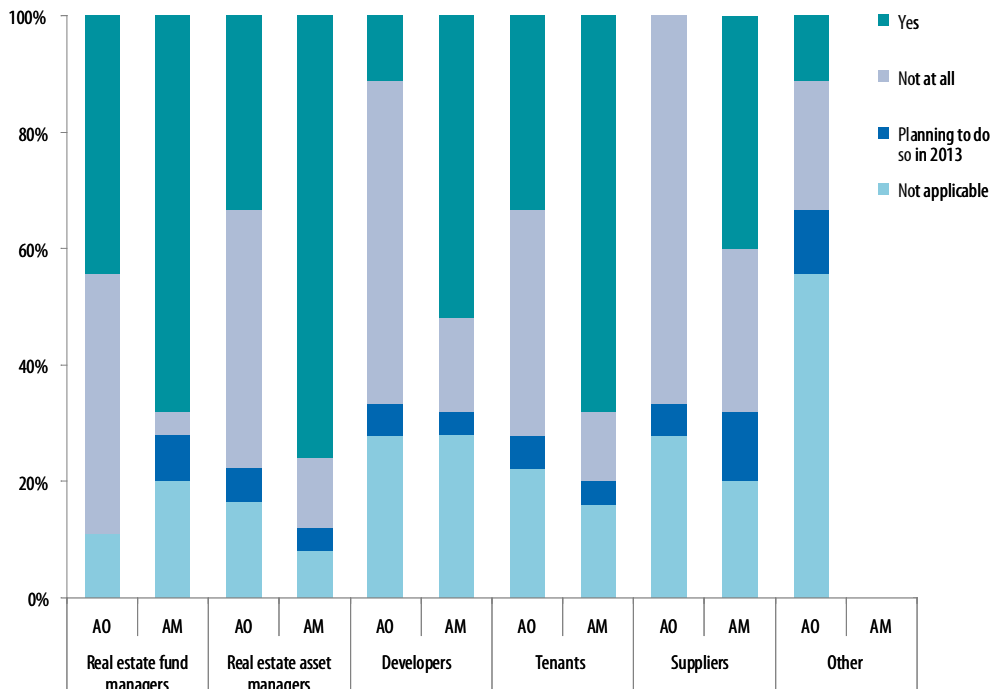
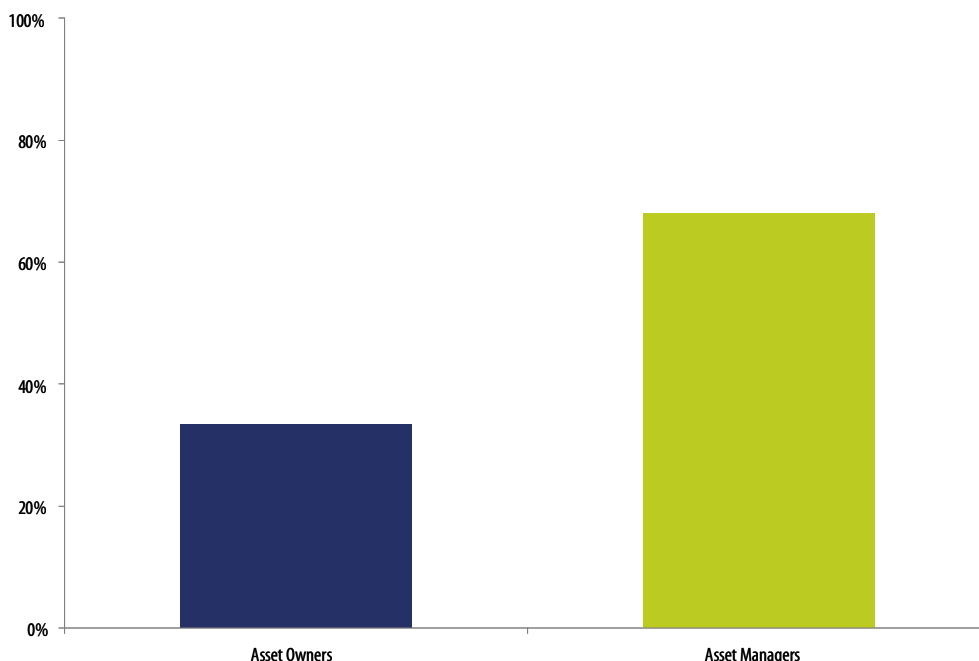


Figure 24 Participation in global or regional sustainability benchmarks



Two case studies are included below on climate change related activities in property portfolios.

Case study 10 Prudential Investment Management (USA) Assessing Climate Risk in Property Portfolios

Prudential Investment Management (PIM) is an investment manager with a boutique-like structure spanning several affiliates and asset classes. Total AUM is \$840 billion as of March 31, 2013. Approximately 75% of assets are in fixed income, including public fixed income, private fixed income, and commercial mortgages. Significant assets are in public equities (18%) and real estate (4%). PIM participates in INCR, GRI, and CDP. Prudential Real Estate Investors (PREI), the equity real estate business, is a signatory to the Principles for Responsible Investment.

PIM is guided by a policy that states that climate risk will be considered in all asset classes to the extent that climate change has a material impact on those investments. To date, most of the firm's activities have been with regards to their real estate investment program. The firm feels that climate change is most relevant and material for those types of investments because of the relatively long time horizon an inherent links to resource use and energy efficiency. PIM is "eager" to make the link between climate change materiality and public equity and fixed income, and welcomes assistance in doing so, but recognizes a disconnect between the climate change time frame and relatively short holding periods for those portfolios.

PREI considers climate change when evaluating new developments, existing developments, purchases of assets, redevelopment of assets and REITs and plans to integrate considerations into unlisted property vehicles and mortgage backed securities this year. Flooding and wind risk are the primary components of climate change related assessments but energy efficiency, renewable energy use, water and waste management are included in the development of assets and purchase of assets. Sustainability and energy standards such as their Sustainable Standard Operating Guidelines and LEED are considered for each investment. In addition PREI has adopted the Urban Land Institute's Greenprint Center for Building Performance (<http://www.uli.org/research/centers-initiatives/greenprint-center/>), targeting a 50% reduction of energy use by 2030.

To accomplish this goal, PREI encourages innovation among its internal teams. Leasing roofs for solar photovoltaic development, testing and deploying new energy efficient technologies and green leases are examples of internal innovation. Additionally, sustainability has been integrated into the standard Memorandum of Understanding in the US to inform potential real estate development partners of sustainability related goals early on in the relationship.

Case study 11 PRUPIM (UK) Assessing Climate Risk in Property Portfolios

PRUPIM is a dedicated real estate asset manager based in the UK with approximately US\$26 billion of assets across Europe, North America and Asia Pacific. PRUPIM's philosophy is that responsible property investment (RPI) helps it "to protect and enhance performance for [its] clients." PRUPIM's RPI activities cover four specific areas: understanding sustainability risks in the investment process (i.e. selection and management of assets); increasing asset efficiency; understanding the needs of occupiers in order to enhance asset performance (e.g. on energy efficiency) and maximise occupancy rates; and PRUPIM's internal operational standards (energy use, recycling etc.).

This case study picks up an example of the first area – understanding sustainability risks. During 2012 PRUPIM conducted a pilot study to assess its exposure to planned changes under the UK Energy Act 2011. This Act contains a provision that, should it come into effect, will make it unlawful for landlords to transact properties that do not meet minimum energy performance standards – believed to be a minimum "EPC" rating of E (the range is A to G, with A being the highest). The pilot study assessed one of PRUPIM's commercial property portfolios, which contains 150 assets. This assessment identified 25 "at risk" properties for which PRUPIM is now investigating improvement options based on the cost versus payback for each potential improvement.

In addition to the energy performance assessments, PRUPIM also reviewed its flood risk assessment process for UK properties in 2012. The internal rating of every UK property held by PRUPIM was cross-referenced against the relevant Environment Agencies' flood risk databases to ensure that its managers understood the flood risk levels for each asset. Where a property was determined to have an elevated flood risk, this triggered engagement with property and facility managers to ensure they were both aware of the risk level and understood potential mitigation measures. Assets subject to elevated levels of flood risk are only considered for purchase if an appropriate and robust technical solution has been established to mitigate the risk.

Infrastructure

More than 50% of internally managed infrastructure assets were monitored for climate change risks and impacts, with a fairly even spread of factors being considered.

Figure 25 Climate change factors considered in developing, selecting, managing infrastructure assets

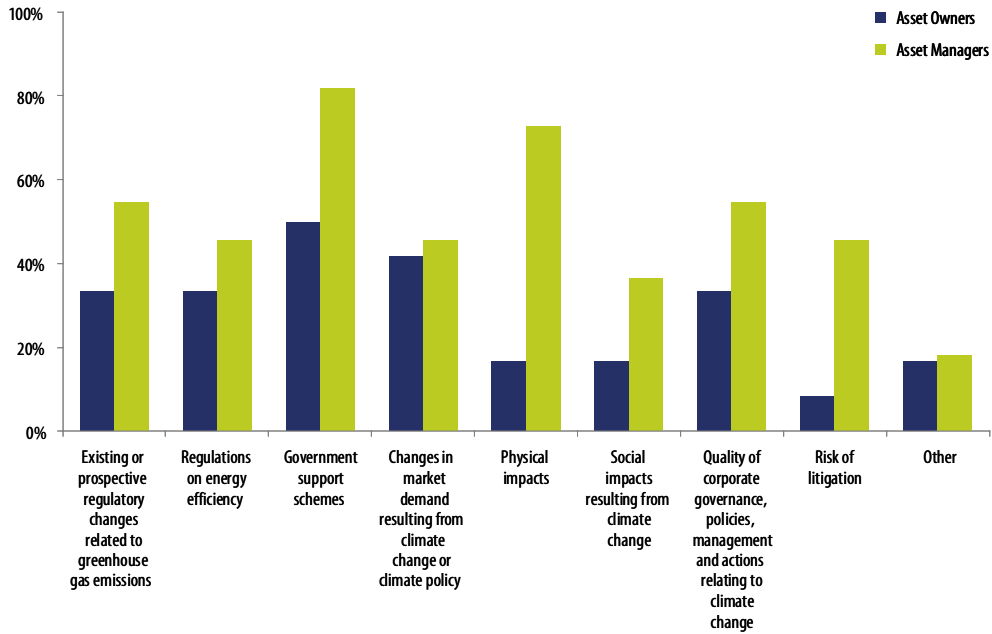
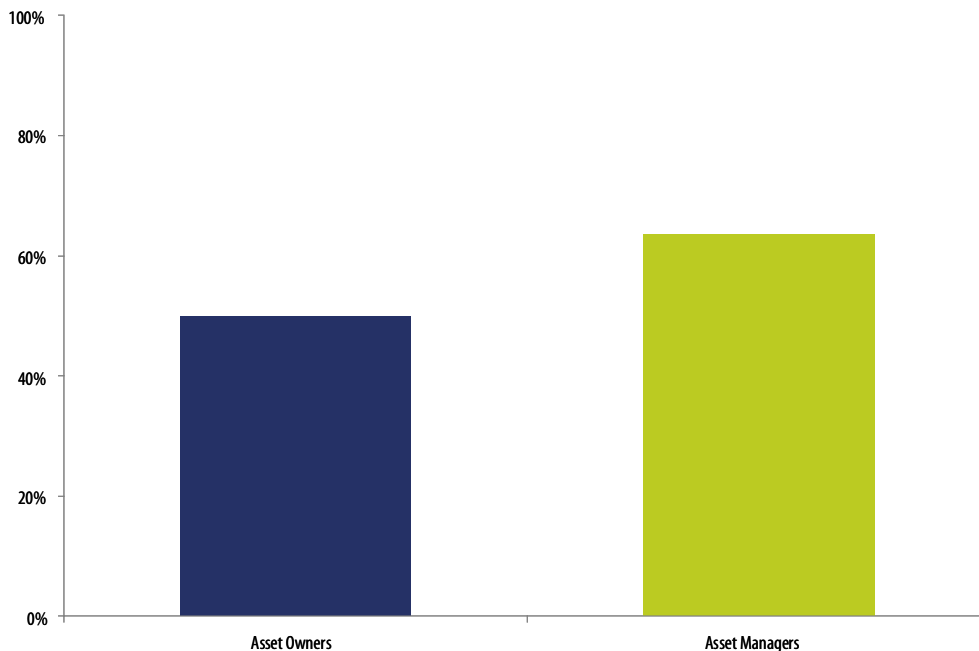


Figure 26 Monitored Internal infrastructure assets for climate change risks and impacts in 2012



Just over a third of Asset Managers responding to this question elected not to invest or divested from an infrastructure investment due to climate change concerns.

Case study 12 Hastings Fund Management (Australia) Assessing Climate Risk in Infrastructure Portfolios

Hastings Funds Management (Hastings) was established in 1994 and is a specialist manager of infrastructure equity and debt investments, currently managing approximately A\$7.4 billion and with assets invested across Australia, the US, the UK and Europe. Hastings mainly invests into airports, toll roads, seaports, gas and electricity transmission, water utilities and timber.

Climate change risks are fully integrated into the qualitative and quantitative assessment of Hastings' infrastructure investments at the investment proposal stage and on an ongoing asset management basis.

Risk management is central to Hastings' investment process and it has developed a formal ESG policy to capture such considerations. Hastings' active asset management philosophy ensures that through its Board representation (and hence strategic involvement) with portfolio assets, all major risks and opportunities, including those relating to climate change, are identified, monitored and continually managed on an ongoing basis, where such risks are material to the performance of the asset in question.

Specific examples include:

- Research into current and potential future regulations and their likely impact on capital expenditure requirements (capex) – such as higher cost future plant (building standards) or upgrade costs (pollution controls)
- Ensuring operating expenditure (opex) forecasts include all relevant costs including potential carbon credit purchases and changing energy prices
- Research into government schemes (e.g. incentives for renewable energy) and their likely impact on market supply, energy pricing and revenue forecasts
- Changes to long term market drivers which might result from climate change or climate policy such as potential impacts on regional population growth and demographics, tourism, GDP/GSP variations, etc.
- Consideration whether infrastructure assets have been built with sufficient characteristics to cope with potential changing conditions: material strength, height from sea level, wind ratings etc.
- Recognition of relevant corporate governance issues, policies and management strategies relating to climate change and ESG issues and whether the management teams of infrastructure assets have appropriately incorporated these factors into their risk registers and disaster recovery plans
- Ensuring infrastructure assets have strong compliance capabilities and track records which demonstrates their ability to comply with licences, regulations, and guidelines including those relating to emissions and environmental issues (given the importance for infrastructure assets to maintain their operating licences and social and political support)

At this stage, Hastings has found that its increased consideration of climate change and wider ESG factors in its overall risk management framework has given it a broader perspective when selecting the better assets, sectors and geographies in which to invest on behalf of its clients. In particular it has highlighted the continued attractiveness of well structured contracted and regulated assets in this uncertain environment given their more defensive investment characteristics and ability in many cases to pass through incremental costs where prudently incurred without impacting investor returns.

Commodities

In 2012, key climate change factors such as physical impacts, were considered by just over 40% of Asset Owners and just over a third of Asset Managers with internally managed commodities exposure. Less than a third of Asset Managers and very few Asset Owners elected not to invest or to divest based on climate change concerns.

Figure 27 Climate change factors considered in due diligence processes in selecting commodities

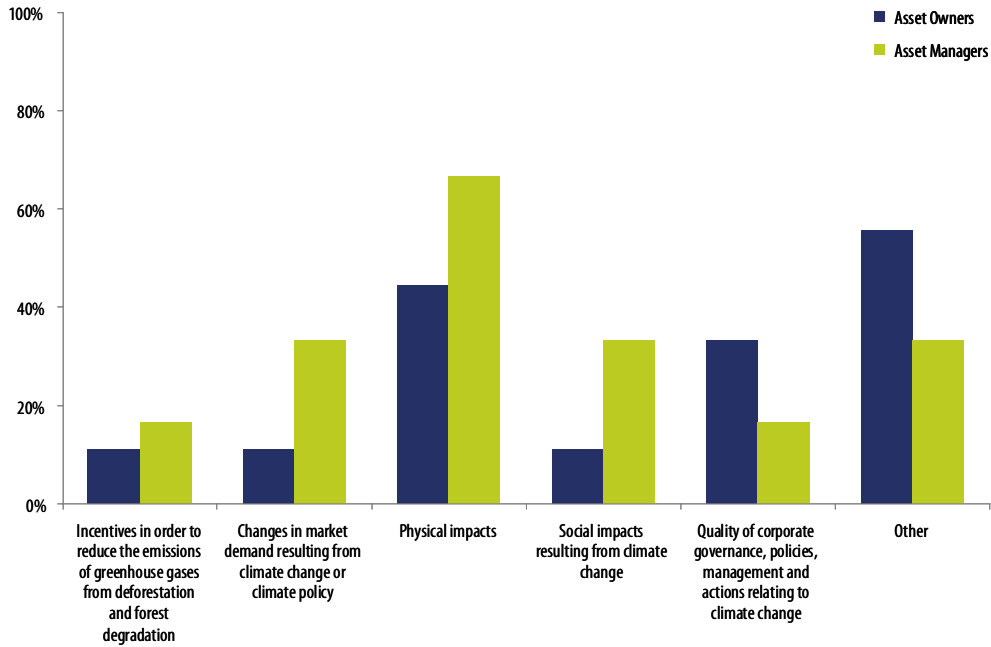


Figure 28 Commodities monitored for climate change risks and impacts in 2012

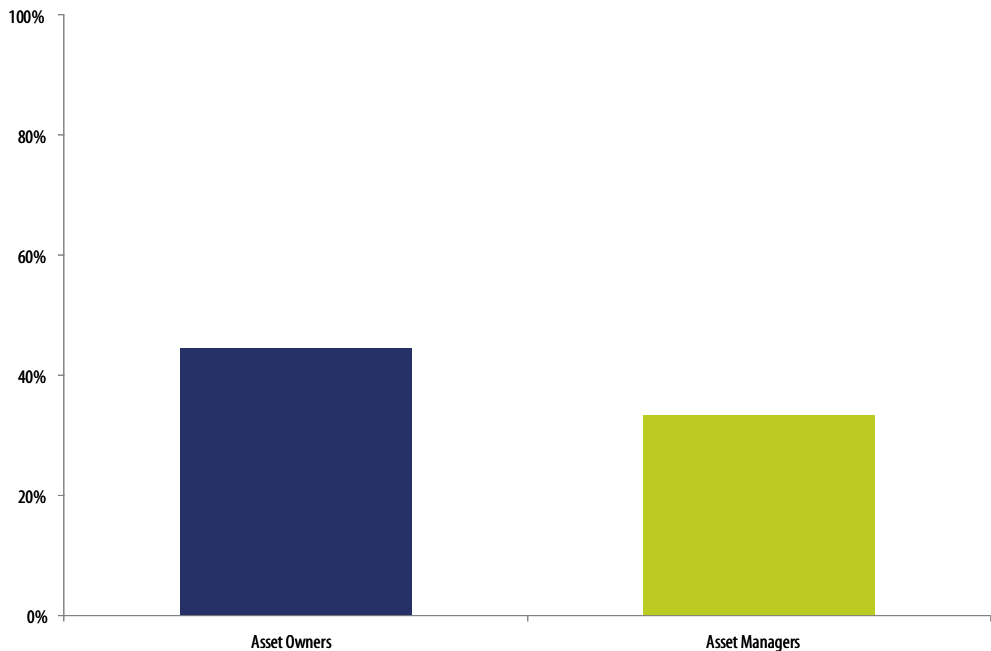
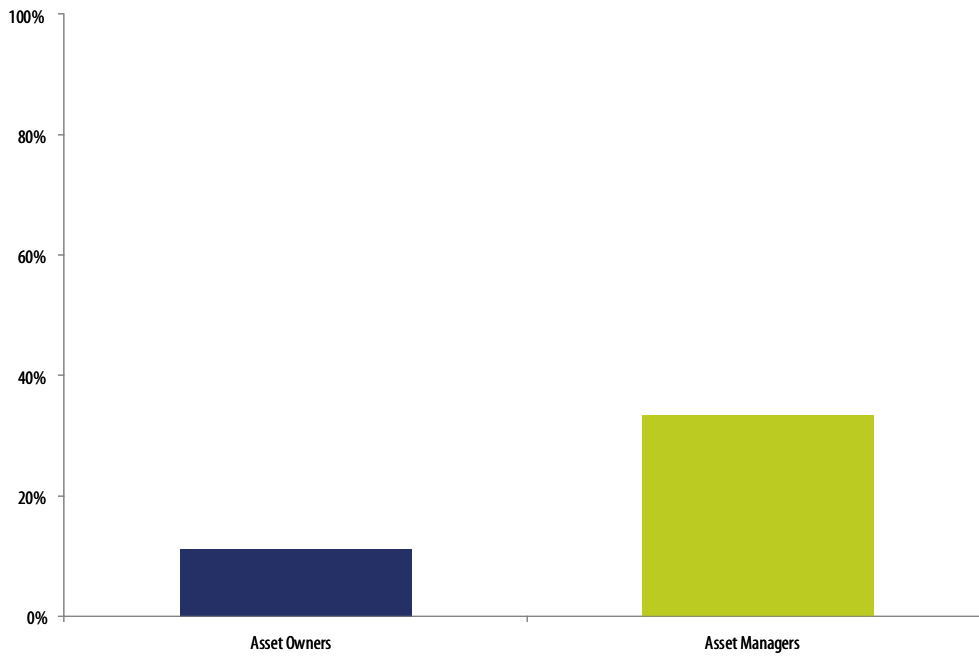


Figure 30 Divested from / elected not to invest in commodities due to climate change concerns



Concluding comments

Real Estate investors again advanced their monitoring and integration of climate change risks in the past year by focusing on the resource efficiency of assets. For internally managed infrastructure investments, there was a more even spread of factors considered, including the current or future policy and regulatory framework. For commodities, the physical impacts were the key climate factors being considered.

Appendix: list of respondents

Asset owners

AustralianSuper
Bangkok Insurance
Bedfordshire Pension Fund
BT Financial Group
BT Pension Scheme
California Public Employees' Retirement System (CalPERS)
California State Teachers' Retirement System (CalSTERS)
Catholic Superannuation Fund
Cbus
Central Finance Board of the Methodist Church
Christian Super
Church of Sweden
Commonwealth Superannuation Corporation (CSC)
Environment Agency Pension Fund
ESSSuper (Emergency Services and State Super)
Greater Manchester Pension Fund
HESTA Super Fund
Local Government Super
London Borough of Islington Pension Fund (Islington Council)
Maryland State Retirement and Pension System
Mercer Australia
Mercy Investment Services, Inc.
Non-Government Schools Superannuation Fund (NGS)
PGGM
Qsuper
Rei Super
Second Swedish National Pension Fund
South Yorkshire Pensions Authority
StatewideSuper
The Church Commissioners for England
The Church of England Pensions Board
UniSuper Limited
Unitarian Universalist Association of Congregations
United Methodist Church General Board of Pension and Health Benefits
USS Investment Management
VicSuper
West Yorkshire Pension Fund

Asset managers

AMP Capital
Amundi
APG Investments
Arkx Investment Management
Australian Ethical Investment
Aviva Investors
BlackRock, Inc.
BNP Paribas Investment Partners
Breckinridge Capital Advisors
BTIM
Calvert Asset Management Company, Inc.
CCLA
Celeste Funds Management
Colonial First State Global Asset Management
Co-operative Asset Management
DEXUS Property Group
Ecofin Australia Pty Ltd.
Eureka Funds Management
F & C Management Ltd
Five Oceans Asset Management
Generation Investment Management LLP
Hastings Funds Management
Henderson Global Investors
Hermes
Hunter Hall Investment Management Limited
Impax Asset Management
Insight Investment
Kleinwort Benson Investors
Legal & General Investment Management
Mercer Global Investments Europe Limited
MIRVAC
Mn Services
Nanuk Asset Management Pty Ltd
Pax World Management Corp.
Perpetual
Platina Partners
Prudential Investment Management
PRUPIM
Robeco
Russell Investments
Scottish Widows Investment Partnership
SEB Investment Management
Solaris Investment Management Limited
State Street Global Advisors
Temporis Capital
TerraVerde Capital Management LLC
Victorian Funds Management Corporation



Investor Network on
CLIMATE RISK



Investor Group on
Climate Change



GLOBAL INVESTOR COALITION ON CLIMATE CHANGE

August 2013