

Low Carbon Investment in Asia

Unlocking Asia's Potential

Integrating Climate Change Criteria into Investment Decisions

January 2011



About the Association for Sustainable & Responsible Investment in Asia (ASrIA)

The Association for Sustainable & Responsible Investment in Asia (www.asria.org) is a not for profit, membership association dedicated to promoting corporate responsibility and sustainable investment practice in the Asia Pacific region. ASrIA's members include investment institutions managing over US\$4 trillion in assets, however membership is open to any organization which has an interest in sustainable investment.

ASrIA's goal is to build market capacity for SRI. We provide insightful, up to date and accessible information on the development of SRI in Asia and globally. We have also become the platform for different sectors within the community to exchange information and perspectives on SRI, and to take practice forward.

About the UK Foreign and Commonwealth Office (UK FCO)

The UK Foreign and Commonwealth Office works around the globe to drive forward international action to tackle climate change. Addressing climate change requires a sustained global effort to reduce greenhouse gas emissions. The British Consulate-General in Hong Kong aims to support the Hong Kong government, businesses and investors in developing low carbon strategies, through promoting debate and sharing UK expertise.

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Report No.: Final v.0



Executive Summary

Integrating climate change risks and opportunities in the calculation of investment returns is in its infancy in Asia. Asia's major state pension funds and insurance companies are lagging those in Europe, North America and Australia in considering climate change risks and opportunities as part of the investment process.

A small but growing number of major Asian asset owners are leading the way in adopting responsible investment policies that take into account Environmental, Social and Governance (ESG) issues but this practice is not yet widespread.

There has traditionally not been much pressure from beneficiaries, investors or regulators in Asia to incorporate these concerns to reflect the fair value of an investment.

The result has been less pressure on Asia's investment managers to consider climate change criteria as part of fund management, less pressure on investment analysts to research the implications of climate change for investment, and less pressure on companies to provide disclosure about their carbon footprints and climate change strategies.

There is a growing global consensus that it is a fiduciary duty of pension fund trustees to address ESG issues including climate change risk; this view is backed up by legal opinions and reports from the United Nations Environment Programme Finance Initiative (UNEP FI).

Better reflecting the fair value of an investment through incorporating climate change risks and opportunities into the asset valuation decision is gaining urgency in Asia because it makes competitive and financial sense. Investment flows into Asia from other financial centres – in response to Asia's relatively promising growth prospects – are rising and Asian manufacturers are a crucial part of the world's supply chain.

The result is that a growing number of Asia's investment managers, analysts and companies may be feeling pressure from their peers from outside Asia to integrate climate change criteria into their investment

analysis, research and disclosure, even in the absence of unambiguous pressures from Asia's asset owners.

Beneficiaries of investments in Asia (e.g. pension fund recipients or life insurance beneficiaries) have yet to translate concern for climate change into coordinated, influential action to push asset owners to confront the risks and opportunities associated with climate change and the low carbon economy.

Rather, it has been the engagement by select investment professionals and the support of some asset owners – pension funds, insurance companies, endowments, foundations and family offices – which have been the drivers to begin integrating ESG criteria into the investment process in Asia and encourage a supportive regulatory environment.

This report has two **objectives**: First, it **summarises current climate change related investment analytical frameworks** developed by global thought leaders in the industry. Second, it proposes a way to **frame the connection between the investment decision process and climate change**, thereby facilitating the mobilisation of capital to tackle one of Asia's most urgent challenges – shifting to a low carbon economy.

As a way forward in supporting Asia's shift towards a low carbon economy, ASrIA proposes to launch the Asia Investor Group on Climate Change (AIGCC) and seeks support and founding members for this initiative.

The intent is to address the region's shift to a low carbon economy and to increase understanding amongst beneficiaries, asset owners and asset manager of the benefits of integrating climate change risks and opportunities in the calculation of investment returns in Asia.

ASrIA intends to bring Asia's influential institutional investors together in a working group around the issue of climate change, provide a secretariat to facilitate financial solutions and provide a platform to exchange best practices in order to support the region's shift to a low carbon economy.

Acknowledgements

The Association for Sustainable & Responsible Investment in Asia (ASrIA) would like to thank the generous individual and institutional supporters who made the Low Carbon Investment in Asia (LCIA) project possible, in particular the Foreign & Commonwealth Office of the British government.

Special thanks to Alison McEwen, Andrea Leung, and Joanne Wong of the British Consulate-General Hong Kong and the entire staff of ASrIA for their direct and indirect assistance in preparing this report. Thanks also to the board of directors of ASrIA for their support and direction.

We could not do our work without the partnership and strategic collaboration of our members. We also extend a warm thanks to the following financial institutions in Hong Kong, Mumbai, Singapore and Shanghai which provided insight into the research and investor engagement process:

Aberdeen Asset Management Asia Ltd	CIMB-CK Securities (HK) Ltd.	Goldman Sachs Asset Management	RedTech Advisors
AlpInvest Partners Ltd	CLSA Research Ltd	IFCI Ltd	Shanghai Energy Exchange
AsiaCrest Capital	CRA Management Pte Ltd	India Merchants' Chamber	Shanghai Stock Exchange
Bank of America Merrill Lynch India	Deutsche Asset Management (Asia) Ltd	Macquarie Capital Securities Ltd	Standard Chartered Bank
Benchmark Asset Management Company Private Ltd	Edmond de Rothschild Asset Management (EdRAM) Hong Kong Ltd	Mirae Asset Securities (HK) Ltd	State Street Global Advisors
BNP Paribas (Asia) Ltd	Ennovent	Nexus Venture Partners	TATA Capital Ltd
BNP Paribas Investment Partners	Environmental Investment Services Asia Ltd (EISAL)	Nikko Asset Management Singapore Ltd	The Hongkong and Shanghai Banking Corporation Ltd (India)
BNP Paribas Securities (Asia) Ltd, Hong Kong	Fair Klima Capital	Nomura International (Hong Kong) Ltd	Unigestion Asia Pte. Ltd
China Europe International Business School, Shanghai	First Climate AG	Rabobank International	YES BANK Ltd
Chubb Group of Insurance Companies			

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Introduction

Background

About the time that the Low Carbon Investment in Asia (LCIA) project was first conceived in the early part of 2009 the Asian Development Bank was planning its *High Level Dialogue: Climate Change in Asia and the Pacific - A Development Challenge* event and Bloomberg was reporting on how Asia's security could be imperilled as fresh water declines in the region due in part to melting glaciers.

Now, some 18 months later the investment community is still talking about similar events and headlines. So how has the financial services industry responded to the climate change perils and what changes have been initiated to facilitate the shift towards a low carbon economy in Asia?

The LCIA project focused on research into the implications of climate change for investment in Asia, assessing the existing level of investor understanding of climate change implications for investment, and developing an analytical framework for integrating climate change into the investment process.

There are certainly financial market leaders on climate change in Asia ranging from dedicated research teams in large global banks (HSBC Climate Change Centre of Excellence, for example) to boutique environmental investment management companies such as Environmental Investment Services Asia Limited (EISAL). Such firms have put money on the table to develop the thought leadership and financial solutions to spur Asia's shift to a low carbon economy.

Some investment teams grasp the importance of "climate change" because they see the potential for efficiency gains translating into healthier bottom lines. Yet many are waiting for more coherent policies to deal with climate change, including policies for carbon reduction and addressing resource scarcity.

To a limited degree, policy frameworks have been forthcoming in Asia but uncertainty remains high. As a result, the behaviour of investors in Asia looking at the opportunities due to climate change, such as new environmental technologies, is similar to corporate executives hoarding cash, not wanting to commit capital when policy and regulatory risk are high.

The outcome of the Cancun climate conference in late 2010 is still being evaluated and while some common ground was reached amongst negotiators, little new regulatory commitment is immediately forthcoming. Amidst this uncertain regulatory backdrop, investment institutions in Asia are undergoing two fundamental shifts: reforms to address the asset-liability (A-L) mismatch, and asset reallocation away from fixed-income investments to equities.

Asian public and private pension fund schemes are reforming their investment models in response to concerns about an asset-liability mismatch. The economic giants of the region, China and India, have the distinction of ranking the worst in two separate studies

Investors putting money on the table to develop thought leadership and financial solutions

Policy frameworks in Asia forthcoming but uncertainty remains high

Asian pension fund reforms providing opportunity for climate change integration

of their pension systems, namely the Melbourne Mercer Global Pension Index (China) and the Allianz Global Investors Pension Sustainability Index (India)¹, indicating that the long term viability of these pension systems is under threat. China and India are not alone, as other markets including Thailand, Japan, Singapore, Korea and Indonesia also wrestle with expected A-L mismatches.

The good news is that this is not news to pension planners and there is evidence that they are moving to address the issue! This pension reform initiative provides an opportunity to encourage pension fund managers – as they shift to a longer term investment horizon – to develop an analytical framework for integrating climate change and other non-financial ESG criteria.

The shift towards equities and alternative asset classes could be a catalyst

The second dynamic shift is that large institutional investors in Asia are beginning to allocate more towards equities and alternative investments, reducing their historically heavy bias towards government bonds and other fixed-income securities. For example, the US\$272 billion (KRW 314 trillion) National Pension Service of South Korea, the world's fourth largest, plans to increase its equity share from 22% to more than 30% by 2014, while lowering its fixed-income portion from 73% to below 60%.

Therefore, it is opportune for large investment institutions in Asia to evaluate alternative investments that help to mitigate and adapt economies to a low carbon future. The change in asset allocation could be a catalyst for new investment mandates which clearly respond to resource scarcity, support carbon reduction, and incentivise investment managers to integrate ESG considerations into their investment analysis and decision-making.

Report Structure

Frameworks take the perspective of beneficiaries, asset owners and managers

The accompanying LCIA report *Climate Change Risks and Opportunities across Six Key Sectors* – Agribusiness, Energy, Finance, Information Technology & Mobile Telecommunications, Property & Construction, and Transportation – focuses on the implications for investment in Asia of climate change and the shift to a low carbon economy.

This report proposes a framework for integrating climate change criteria into the investment process in Asia, based on our consultations with investment professionals in Asia and a review of current climate change related analytical frameworks developed by global thought leaders in the industry. We review the analytical frameworks from the point of view of the beneficiaries, asset owners and asset managers and offer our conclusions.

Investment Framework for Asia's Low Carbon Future

Explaining the Framework of a Responsible Investment Strategy

The *Investment Framework for Asia's Low Carbon Future* (Figure 1) captures the high-level elements for a successful investment strategy to respond to the risks and opportunities of climate change. The framework emphasises that a responsible investment strategy is the result of a highly participatory and consultative process among all the entities. The investment professionals, namely decision makers in the categories of *asset owners*, *investment managers* and *investment consultants* influence service providers,

regulators, academia and companies. Tables 1 - 3 outline critical questions for the respective investment professionals and suggests responses in the form of recommendations for action, which, if they were followed, would strengthen investment in a low carbon economy.

Investing as a highly dynamic process

Figure 1 underscores that the outcomes at each stage of investment link to the other elements of the process, thereby highlighting the highly dynamic and interdependent nature of the industry. As such, a unidirectional, linear process that may begin with

Figure 1: Investment Framework for Asia's Low Carbon Future



Source: ASrIA Research

an asset owner developing responsible investment objectives and ending with that same asset owner voting at the AGM does not happen in practice. In reality, a responsive and optimum investment strategy that actively accounts for climate change risks and opportunities results from the participation of all the stakeholders/entities. For example, constructive investor engagement with company managers about corporate strategy and carbon performance can feed back into portfolio construction.

1 - Responsible Investment Objective and Policy Development

A Responsible Investment (RI) policy is a critical element for pension funds and other asset owners to maximise long-term returns and fulfil their obligations to beneficiaries. RI policies increase accountability of the fund to identify sustainability risks and opportunities, including those related to climate change, to reflect them in portfolio construction, manager selection, due diligence and engagement and to define programs/ action plans to make the policy goals attainable.

2 - Strategic Asset Allocation and Portfolio Construction

Strategic asset allocation and portfolio construction are often left out of the discussion of the investor response to climate change, with the emphasis on company appraisal and selection. Yet this high-level element is crucial for institutional investors and investment consultants alike. Aligning strategic asset allocation decisions with climate change investment objectives requires a great deal of sophistication. Investors need to discuss with their investment consultants or in-house experts the impact of climate change on strategic asset allocation and portfolio construction.

3 - Assessment of Opportunities and Risk Management

Assessment of opportunities and risk management involves (a) technical risk management within a portfolio (for example, monitoring tracking error in relation to a climate change benchmark) and (b) analysis of how companies are addressing climate change through business strategies, either from the opportunity angle or as a response to the risk that climate change itself poses. There is clear overlap with the element of *security appraisal, valuation and selection*.

4 - Security Appraisal, Valuation and Selection

When evaluating companies, investment managers can account for climate risk and opportunities based on the principle of risk-adjustment factors for cash flow estimates. In this context, expected cash flows likely to be affected by GHG constraints can be adjusted to incorporate risks posed by climate policies as well as opportunities involved in new business models, carbon markets and products. Another valuation tool involves risk-adjusted discount rates. In this approach, modelled cash flows are unchanged but the required rate of return adjusts to reflect expectation of the added risk from a more stringent climate policy environment.

5 - Constructive Engagement, Voting and Reporting

Investor-company dialogue about corporate strategy to address climate change and improve carbon performance is another element of the investment process. This stage often happens in coordination with submitting proposals for or voting at the AGM. Investment professionals need to factor in a crucial trade-off in their analytical frameworks: balance portfolio diversification (i.e. “the more securities, the better”) with the ability to have an effective corporate engagement process (i.e. “the fewer securities, the better”).

Recommendations for Action

Tables 1 - 3 provide recommendations for asset owners, investment managers and investment consultants to realise a shift towards a low carbon economy. While the section *Review of Analytical Frameworks* in this report explains in greater depth these recommendations for action, the tables below additionally highlight key questions when considering integrating climate change as an investment driver.

Table 1: Recommendations for asset owners

Investor Type

Framework Components

Question

Recommendations

Asset Owners			
Fiduciary responsibility	Knowledge development	Barriers to acting on climate change	Responsible investment policy
Have you determined how to accommodate the new fiduciary responsibilities to incorporate climate change risks into your investment process?	How do you ensure that trustees and staff have the required knowledge to deal with the risks and opportunities related to climate change?	How do you deal with barriers to act on climate change related issues?	Have you sought advice to develop an Environmental, Social and Corporate Governance (ESG) Investment Policy aligned with long term objectives?
Collaborate with other asset owners in Asia to commission legal analysis to determine trustees' fiduciary responsibility towards ESG integration and climate change analysis	Identify a champion within the organisation (or recruit one) who is experienced in ESG integration and climate change analysis Plan, organise and execute stakeholder roundtables with independent environmental experts and civil society organisations	Build industry capacity via regional peer groups to discuss the challenges of developing and implementing a policy for integrating climate change, and effectively engaging with companies	Seek an investment consultant with experience in working with asset owners to integrate ESG policy with investment objectives Support initiatives to develop expertise and talent within the pool of local market participants

Source: ASrIA Research

Table 2: Recommendations for investment managers

Investor Type	Investment Managers				
Framework Components	Asset allocation	Diversification	Valuation tools	Assessment framework	Appraisal process
Question	<p>What process do you have to integrate climate change considerations into your investment portfolio, including higher risk securities with significant environmental benefit?</p>	<p>How do you consider industry and company specific climate risks in your portfolio diversification strategy?</p>	<p>Do you have tools to value securities based on climate risk?</p>	<p>How do you assess industries based on climate change opportunities for growth, modal shifts in demand, changed drivers in competitive advantage, and implications of climate transition?</p>	<p>Have you developed an objective methodology to measure financial performance and climate change risks/opportunities in order to identify the best placed companies in each sector?</p>
Recommendations	<p>Negotiate with your client a performance review process and incentive scheme which includes climate change considerations</p>	<p>Make the business case for additional financial solutions for Asia (e.g., FTSE CDP Carbon Strategy Index Series)</p>	<p>Develop and benchmark internal models of the relationship between corporate carbon emissions and both company value and the cost of capital components (cost of equity and capital debt)²</p>	<p>Illustrate financial opportunities being realized by accounting for climate change in investment decisions</p>	<p>Help recruit Carbon Disclosure Project (CDP) signatories and members in Asia to signal to company managers that ESG and climate change considerations are used in investment decisions</p> <p>Disclose, as much as possible, the ways third-party GHG data is being used in your investment process</p>

Source: ASRIA Research

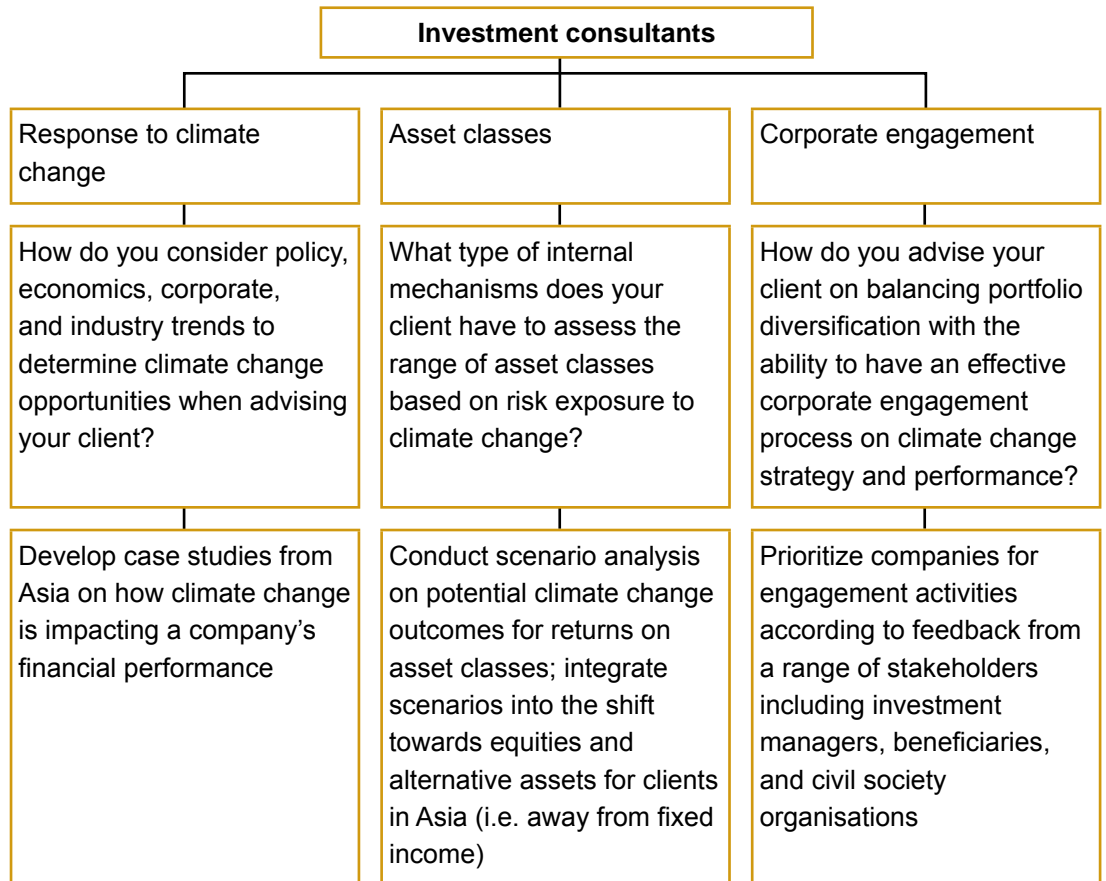
Table 3: Recommendations for investment consultants

Investor Type

Framework Components

Question

Recommendations



Source: ASrIA Research

High Priority Actions for a Low Carbon Economy

The “We now need” statements below are concrete ways the *Investment Framework for Asia’s Low Carbon Future* can be implemented. These statements reflect the high priority needs of beneficiaries, asset owners, investment consultants and investment managers in Asia. Each statement is targeted at a specific financial entity within the investment ecosystemⁱ. From beneficiaries demanding greater attention to climate change by pension fund planners, to investment managers needing incentive clauses in investment mandates, voicing these concerns today can unlock the enormous potential to shift Asia’s economy to a low carbon future.

Table 4: Concrete ways to implement the *Investment Framework for Asia’s Low Carbon Future*

“WE NOW NEED ... “ STATEMENTS

Beneficiaries ⁱⁱ	We now need asset owners to develop deeper knowledge about how climate change can impact our investments.
Asset owners / Investment consultants ⁱⁱⁱ	We now need government officials and trustees to indicate through statutory / regulatory action and investment policy that the incorporation of climate change considerations in our investment process meets our fiduciary responsibilities.
Investment consultants ^{iv}	We now need investment managers to test more sophisticated financial valuation tools with climate change variables for equities, bonds and alternative asset classes.
Investment managers ^v	We now need asset owners and investment consultants to issue requests for proposals to consider climate change in strategic asset allocation decision making.

i. For a description of the investment ecosystem see section *The Investment Ecosystem* of this report.

ii. For an example of demands by beneficiaries refer to section *Perspective of the Beneficiaries* of this report.

iii. For a discussion on fiduciary duty refer to sub-section *The IIGCC Perspective* of this report.

iv. For an example for financial valuation tools refer to sub-section *The Goldman Sachs Approach* of this report.

v. For an example on investor collaboration on climate change and strategic asset allocation refer to sub-section *The Deutsche Bank Climate Change Advisors Perspective* of this report.

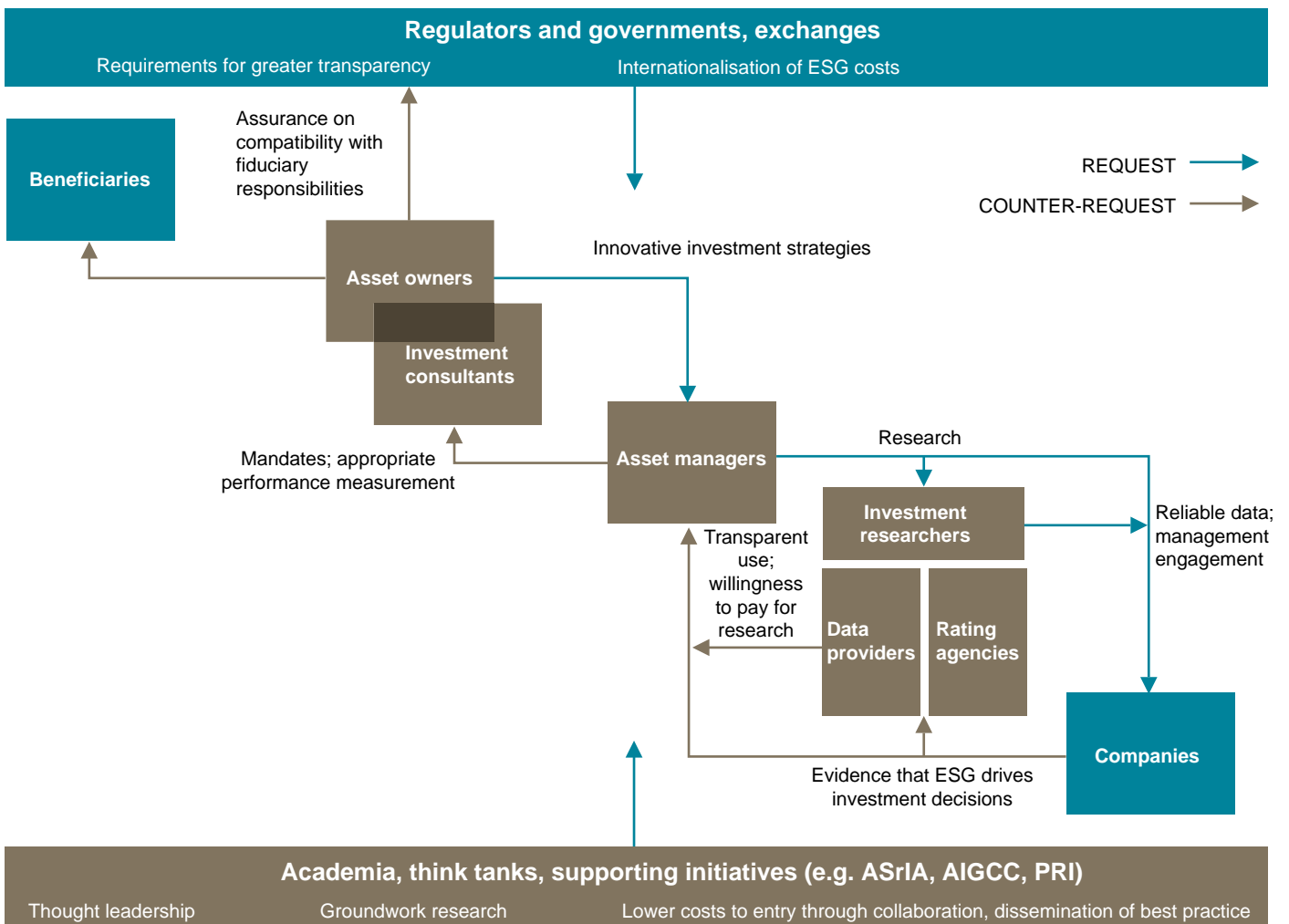
The Investment Ecosystem

Understanding the ecosystem to frame analysis of climate change

Discussion of the system of financial actors is a good place to start

Figure 2 depicts the complex system of financial actors in the investment community. This serves as a useful starting point to develop an investment response to climate change. The interactions among participants are based on requests and counter-requests that drive the integration of financial, economic/environmental, social and corporate governance (ESG) criteria in general, and climate change in particular, into investment analysis. This system of requests and counter-requests should be considered when designing an investor analytical framework to respond to climate change.

Figure 2: Collaboration and participation by all market actors is key to addressing climate change



Source: Adapted from IFC and others⁴

Investors place requests for information on companies and companies have counter-requests

“When upstream participants request disruptive changes to the way the system works, they must accompany their requests with assurance (counter-requests) that their own actions will be transparent, and that risks taken will be reciprocated.”

Source: IFC³

For example, when regulators or asset managers place demands on Asian companies for higher quality of disclosure on corporate strategies to shift to a low carbon economy, the investee company, in turn, makes a counter-request to the regulator or asset manager for evidence that ESG and climate change considerations drive investment decisions. The remainder of this report considers the role of the main investor categories of beneficiary, asset owner and asset manager.

Review of Analytical Frameworks

Beneficiaries in Asia have not engaged with asset owners

Perspective of the Beneficiaries

Beneficiaries in Asia (e.g. pension fund recipients or life insurance beneficiaries) have yet to translate concern for climate change into coordinated, influential action to push asset owners to confront the risks and opportunities associated with climate change and the low carbon economy. This lack of engagement on the ESG or low carbon front can be attributed to two reasons: (i) that scheme members are either not familiar with the investment process and performance of the asset owners or (ii) they are not aware of the potential for achieving higher risk-adjusted returns by adopting sustainable and responsible investing criteria.

Good investment practice involves clear processes to communicate with scheme members

The perspective of the beneficiary having a representative voice in the investment process has developed strong roots in other markets however. For example, the Ontario Teachers Pension Plan (OTPP) in Canada and the Universities Superannuation Scheme (USS) in the United Kingdom have made commitments to take corporate governance, environmental and social factors into consideration during the investment process and have also become signatories of the Carbon Disclosure Project. Furthermore, clear processes have been established to communicate with pension scheme members about responsible investment decisions and rates of return.⁵

In Asia ex-Japan only three asset owners have become signatories to CDP, exemplifying that the impetus for low carbon investments remains weak in the region. Representation of the views and concerns of beneficiaries in the investment process is a fundamental first step for the purpose of adopting more sustainable and responsible decision making practices amongst asset owners.

Perspective of the Asset Owners

The requirements of the asset owners in terms of enhanced understanding of incorporating climate change risks into rates of return calculations are presented here from the IIGCC and DBCCA perspectives.

The IIGCC Perspective

Europe's IIGCC (Institutional Investor Group on Climate Change) developed a guide for pension fund trustees to understand and address climate risk.⁶ The guide discusses the following **five key elements** as part of an analytical framework for integrating climate change into the investment process.

Cross-market issues like climate change are particularly relevant for universal owners

Balancing portfolio diversification with corporate engagement is crucial

Identifying staff members as “champion” is one of the earliest steps in a RI programme

Institutional Investors as Universal Owners

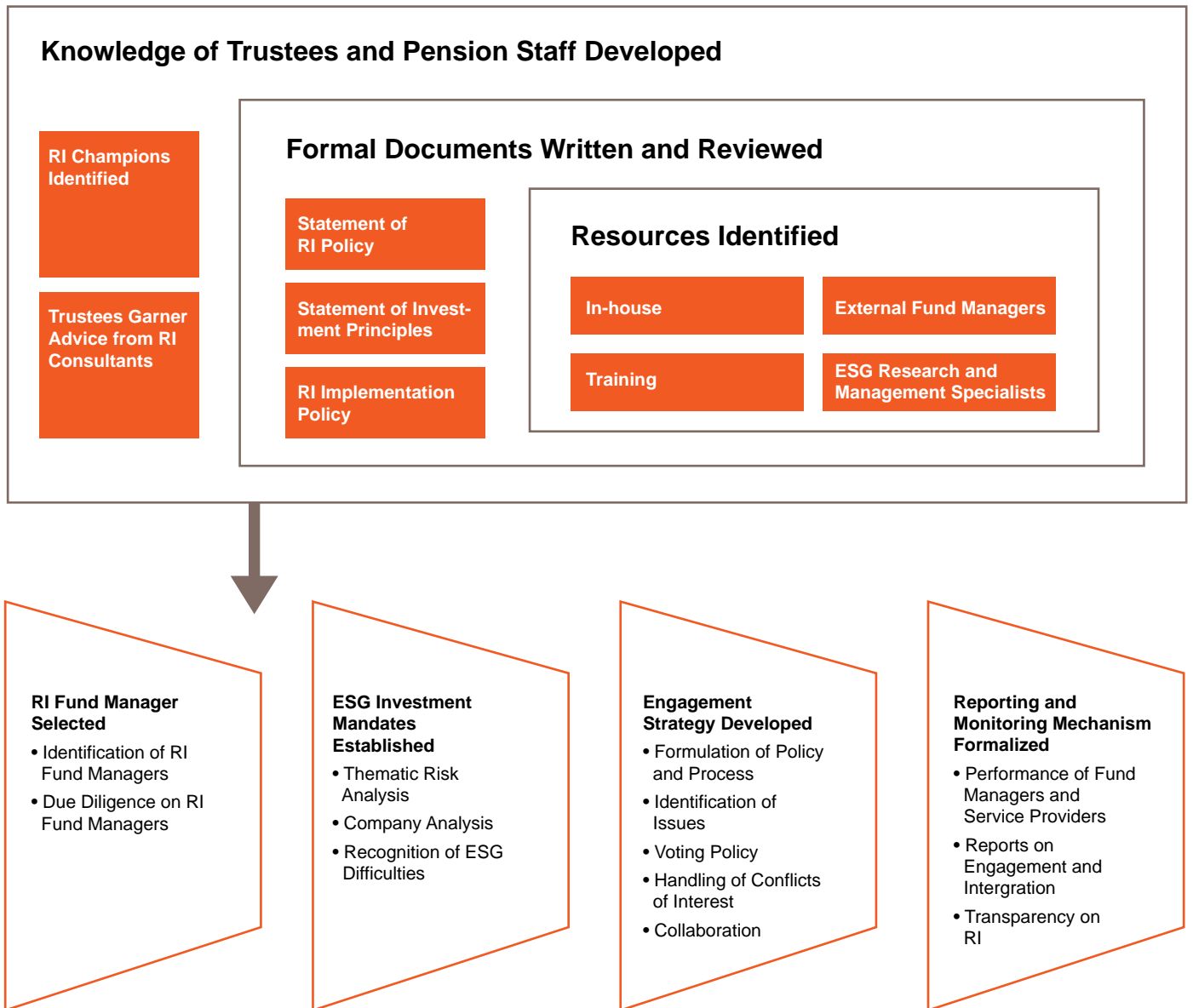
First, it emphasizes that **institutional investors are universal owners**. Universal ownership is the idea that very large institutional investors are exposed to a large “slice” of the investable market because of their massive size and limits on how much they can invest in any one company. “As a result of their broad ownership,” the guide argues, “these investors have a vested interest in the long-term health of the economy as a whole, making cross-market issues like climate change particularly relevant.”⁷

Investment professionals need to factor in a crucial trade-off in their analytical frameworks: balance portfolio diversification (i.e. “the more securities, the better”) with the ability to have an effective corporate engagement process (i.e. “the fewer securities, the better”). Diversification has been considered in the past to be one of the surest ways to achieve acceptable risk-adjusted returns while reducing portfolio volatility but the effectiveness of this strategy has been increasingly questioned.⁸ Asian pension funds, particularly those in developing markets, should be able to engage a higher percentage of companies in their portfolio than those in more developed markets because Asian pension funds tend to hold fewer companies. For example, the US\$272 billion (KRW 314 trillion) National Pension Service of South Korea has about 100 holdings compared to thousands held by the US\$218 billion California Public Employees’ Retirement System (CalPERS).⁹ Apart from doubts about the value of diversification, with securities numbering in the hundreds if not thousands, it is virtually impossible for institutional investors to have a credible engagement process with a substantial proportion of their holdings. During the development of a more sustainable and responsible analytical framework for investment, portfolio rationalisation is advised in many cases on the basis of proprietary information emanating from private meetings which is then incorporated to realistically evaluate a company’s prospects and its ability to compete in a low carbon future.¹⁰

Need for Knowledge Development of Trustees and Staff

The **second** element to an analytical framework involves the **knowledge development of trustees and staff** of institutional investors about how their portfolio holdings are responding to climate risk and opportunities. ASrIA highlighted the importance of internal competency building on non-financial investing criteria in our recent publication *The Time to Lead is Now*.¹¹ Before drafting formal documents and identifying external fund managers, the asset owner needs to identify climate change/low carbon champions within the asset owner’s own organization. Trustees need to work closely with an investment consultant with expertise in strategic and tactical asset allocation to support the shift to a low carbon economy as outlined in Figure 3.

Figure 3: Knowledge development of trustees is crucial to implement a responsible investment (RI) programme



Source: ASrIA¹²

Asset owners can work with their investment consultant to consider different asset class characteristics

Exposure to a Range of Asset Classes

IIGCC identifies a **third** element namely how institutional investors respond to climate change using different asset classes. As asset allocators, **institutional investors are exposed to a range of asset classes**¹³, including:

- Public equities
- Fixed-Income
- Real Estate
- Infrastructure
- Private Equity

The different investment characteristics of asset classes should be considered in responding to climate change.¹⁴ For example, investment into Asian Development Bank's inaugural Clean Energy Bond, which targeted Japanese retail investors and was lead managed by HSBC Securities (Japan) Ltd, carries interest rate risk reflecting the bond's duration and convexity.¹⁵

Barriers in cognitive, political, analytical and market operation need to be addressed

Barriers to Investor Engagement

The **fourth** element highlighted in the IIGCC guide is the range of **barriers to investor engagement** on ESG integration in general, and on climate change, in particular. Analytical frameworks should reference the obstacles that prevent or hinder the financial sector from early responses to climate change. Figure 4 outlines the barriers along cognitive, political, analytical and market operation dimensions, followed by a list of key tasks that asset owners in Asia need to consider to address these barriers.

Fiduciary Responsibility and ESG

IIGCC identifies a **fifth** element for an analytical framework to examine whether institutional **investors have a fiduciary responsibility to incorporate ESG criteria into the investment process** in general, and climate risk and opportunity analysis, in particular. The 2005 "Freshfields" report commissioned by the UNEP Finance Initiative (UNEP FI) highlights legal opinions that ESG integration is well within the the purview of fiduciary duty. This report concludes:

"decision-makers are required to have regard (at some level) to ESG considerations in every decision they make. This is because there is a body of credible evidence demonstrating that such considerations often have a role to play in the proper analysis of investment value."¹⁷

In markets outside Asia there is clear legal rationale for ESG integration

Thus, a further aspect of the fiduciary duty is to turn the investment policy into action.

Figure 4: Barriers preventing the financial sector from early engagement regarding climate change and future tasks for asset owners in Asia

Cognitive	Political	Analytical	Market Operational
<p>Issue</p> <p>Climate change is seen as being marginal to companies' financial performance</p> <p>Sense of shared responsibility deters any one group from taking the initiative</p> <p>Perception that no monetary value in climate action</p> <p>Key Task</p> <p>Develop case studies from Asia on how climate change is impacting a company's financial performance</p> <p>Illustrate financial opportunities being realised by accounting for climate change in investment decisions</p>	<p>Issue</p> <p>Regulatory uncertainty regarding emissions trading systems and carbon tax</p> <p>Key Task</p> <p>Garner legal opinions on fiduciary responsibility to address climate risk and opportunity</p> <p>Showcase Asian governments pushing regulatory and legislative initiatives for low carbon</p>	<p>Issue</p> <p>Insufficient analysis and data from key finance and insurance sector advisors</p> <p>Little understanding of the financial benefits</p> <p>Key Task</p> <p>Increase Asian Carbon Disclosure Project signatories</p> <p>Institutionalise Carbon Disclosure Project data as part of the investor relations process in Asia</p>	<p>Issue</p> <p>Lack of market mechanisms to give low carbon technologies commercial advantage</p> <p>Inefficiencies and complexity in present GHG emissions trading markets</p> <p>Key Task</p> <p>Makes the business case for additional financial products (e.g., FTSE CDP Carbon Strategy Index Series) for Asia</p> <p>Reduce subsidies for high carbon industries (e.g. the oil and gas industries)</p>

Source: ASrIA, Mercer Investment Consulting, Carbon Trust, IIGCC¹⁶

Responsible investment practitioners issue RFPs with ESG clauses

Legal framework analysis on fiduciary responsibility and ESG integration is needed for Asia region

Integration of ESG concerns into the investment process, particularly with respect to **investment mandates and investment management contracts**, is taken a step further in a UN Environmental Programme Financial Initiative (UNEP FI) report.¹⁸ Legal considerations include:

- Is embedding ESG language including climate change in investment management contracts necessary, best practice or potentially restrictive?
- Do institutional investment consultants and asset managers have a duty to proactively raise ESG considerations including climate change with their clients?
- Practical recommendations for pension fund trustees on how to account for ESG considerations including climate change in their investment mandates, and how to ensure that investment mandates that take into account ESG considerations are being implemented by their asset managers?

Asian Context: analysis of legal frameworks for due diligence is needed

Based on research focused on the UK market the IIGCC report concludes that indeed there is a fiduciary duty by trustees to address climate risk. This finding is reinforced by the UNEP FI reports, which focused its work on multiple jurisdictions, namely Australia, Canada, France, Germany, Italy, Japan, Spain, the UK and the US. As a first step in assessing the intricacies of the Asian context, an analysis of the legal frameworks in jurisdictions around the region would help to determine how institutional investors in Asia can accommodate these new responsibilities to address climate risk and opportunity. Such an assessment would need to be carried out in terms of broader ESG considerations and not be strictly limited to climate change.¹⁹

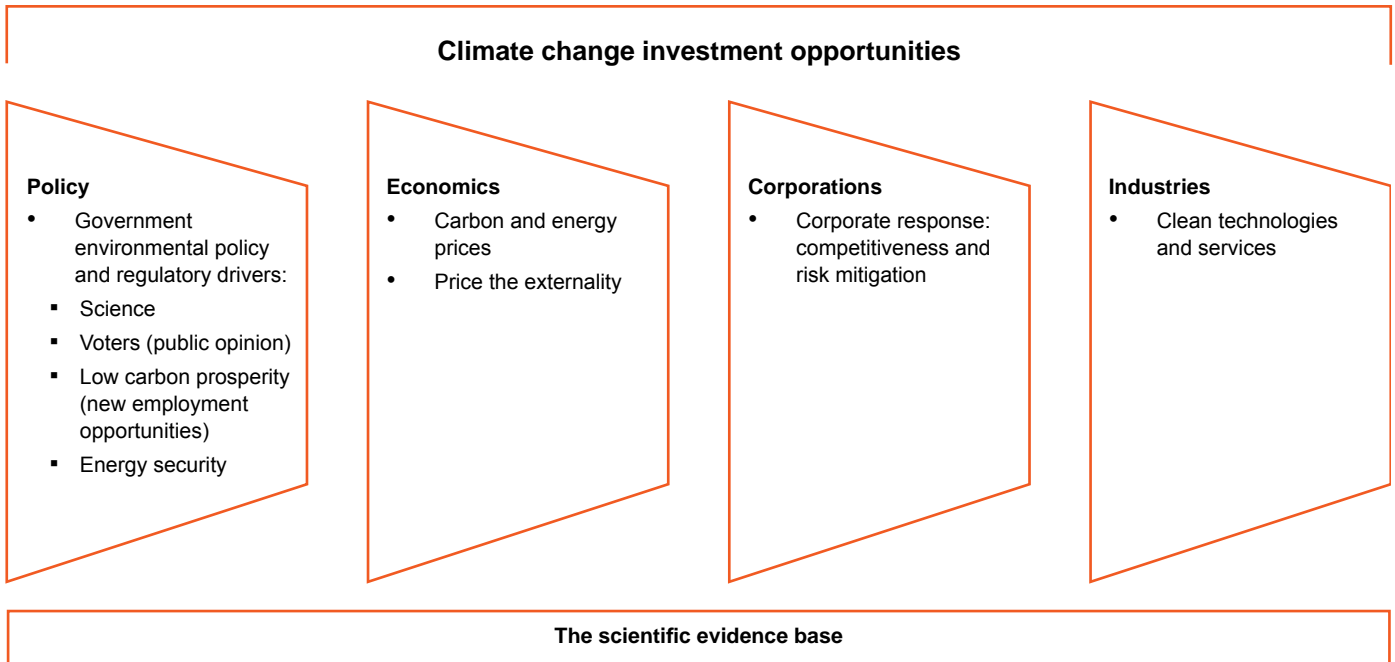
The Deutsche Bank Climate Change Advisors (DBCCA) Approach

Deutsche Bank Climate Change Advisors (DBCCA) offers three main components as part of its investment perspective on climate change²⁰, discussing the relationship of climate change to investment in general, highlighting the importance of risk appetites and the concept of strategic asset allocation.

The Four Pillars of Climate Change

The **first** component identifies the 'Four Pillars of Climate Change' as the analytical framework to understand the **investor response to climate change**. Figure 5 outlines these pillars based on investment opportunities in the context of government policy, economics, corporations, and industries.

Figure 5: Deutsche Bank Climate Change Advisors has established the ‘Four Pillars of Climate Change’ analytical framework to understand the investor response to climate change



Source: Adapted from Deutsche Bank Climate Change Advisors²¹

As outlined in the DBCCA report, the explanation of these four pillars of analysis is as follows:

- **Policy** – government policies and regulations are driven by scientific evidence about climate change as well as public opinion (i.e. voters). Energy security remains as the key policy issue for countries with acknowledgment that the ‘green revolution’ creates economic opportunity (i.e. low carbon prosperity).
- **Economics** – Carbon priced either directly or indirectly through mandates, standards and incentives is to be integrated as an externality into the investment process.
- **Corporations** – tackle climate change through business strategies, either from the competitive angle or as a response to the risk that climate change itself poses.
- **Industries** – Low carbon technologies and services create new growth opportunities.

Timely for large investors to consider investments in higher risk securities

Risk Appetites

Second, the report argues that investors should pursue different strategies across asset classes, which have varying risk attributes and environmental impacts. This input into an analytical framework is helpful because it underscores the **potential differences in the risk appetites between retail and institutional investors**, noting that the higher risks involved in the purer clean technologies strategies, for instance, may be more appealing to institutional rather than retail investors. Therefore, it is timely for large investment institutions in Asia to consider investments in higher risk securities including equities and alternative investments that could help to mitigate and adapt economies to a low carbon economy.

Strategic Asset Allocation

Climate change expected to be a driver of above benchmark returns

The **third** component from the report is the notion of **strategic asset allocation (SAA) as part of the response to climate change**. DBCCA's SAA process (see Figure 6) starts with the traditional asset allocation structure of an institutional investor using asset class benchmarks, such as the MSCI All Country World Index (public equities) and Cambridge Private Equity (private equity). Next, a climate change theme is integrated by identifying substitutes, being careful to keep correlations relatively low between asset classes. For example, the climate change proxy for public equities is an aggregate index of global energy, water, agribusiness and energy efficiency indices.^{vi} DBCCA argues that climate change is expected to be a driver of above benchmark returns (i.e. alpha) rather than a provider of diversification benefits.

According to DBCAA, the SAA process involves determining the expected returns, volatilities and correlations from historical figures, both from the traditional asset classes and climate change proxies. Next, weights are decided for the asset classes with climate change being over-weighted. The SAA model's final step generates the probabilities of achieving the target return as well as a predicted volatility.

Mercer has been collaborating with global institutional investors to identify potential new investment opportunities and possible future risks related to climate change.²² The study considers a variety of climate change scenarios and maps the potential risks and opportunities of these outcomes for returns on asset classes in different regions over the periods until 2030 and 2050 and examines each scenario's impact on strategic asset allocation. According to Jaap Van Dam, Chief Strategist at PGGM:

"I think we can all agree that climate change will have significant impacts on the global community. The big challenge is translating the impact of climate change into consistent effects on strategic asset allocation."

vi. The full report identifies a number of additional proxies.

Figure 6: Strategic asset allocation involves comparing a standard portfolio with one integrating climate change considerations

Consistent effects of climate change on strategic asset allocation is under investigation

SAA process	Description
Standard portfolio with benchmark	Represents a “standard” asset allocation for institutional investors. Only includes broad/traditional indices.
Add climate change theme	Proxies for “focus theme” (climate change) are identified through a review of attributes, characteristics, and relative market share. Proxies are then added to the specific asset class based on their share of that asset class.
Risk/returns/correlations	Standard and climate change historical returns are analyzed to derive a predicted return and volatility.
Overweight climate change	Apply a modest overweight allocation based on our market views for public equity, substantial overweight in infrastructure, and an aggressive overweight to private equity/venture capital.
Statistical testing	Analyze the probability of achieving a target return for the portfolio based on this allocation of input factors.

Source: Deutsche Bank Climate Change Advisors

Note: SSA returns the probability of achieving performance targets, which are calculated through a statistical model including standard portfolio weightings.

Perspective of the Asset/Investment Managers

The approach/perspective of the asset managers as practiced by INCR and Goldman Sachs is presented here.

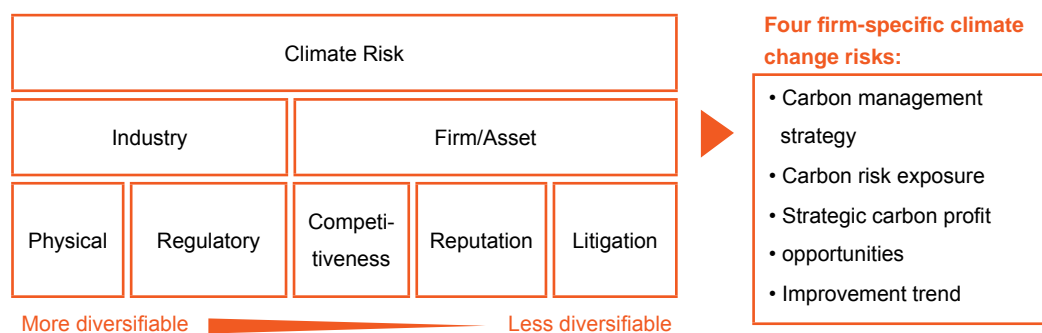
The Investor Network on Climate Risk (INCR) Perspective

INCR contributes two major ideas to a climate change analytical framework.²³ **First**, climate change is connected to modern portfolio theory by emphasizing the **role of diversification**. The report considers that industry and firm-specific risk can be diversified to an extent, dividing climate risk into five different types:

- **Physical** and **regulatory** risks which tend to be industry specific and therefore portfolio managers are able to diversify the climate risk to some extent by investing into multiple sectors.
- **Litigation**, **reputation** and **competitiveness** risks which are more associated with specific firms or assets and therefore portfolio managers should be able to diversify this climate risk by investing into multiple companies within a sector or across sectors.

Climate risk ranges from more diversifiable (physical) to less diversifiable (litigation)

Figure 7: Industry and firm-specific risks impact security valuation



Source: Adapted from World Resources Institute / Ceres²⁴ and ASRIA Research

The **second** key component of INCR's analytical framework concerns **security valuation**. While the investment community uses a wide spectrum of analytical tools to value a security, the Ceres report focuses on discounted cash flow (DCF) analysis, given the long investment periods for infrastructure projects. The basic idea behind this model is that the value of a security should reflect the present value of the issuer's future stream of cash flows. Thus, the approach below is useful when discounting the value of an investment decision based on climate change risk and opportunities.

One approach to account for climate risk and opportunities is based on the general principle of **risk-adjustment factors for cash flow estimates**. In this context, expected cash flows likely to be affected by GHG constraints can be adjusted to incorporate risk posed by climate policies. The INCR report cautions:

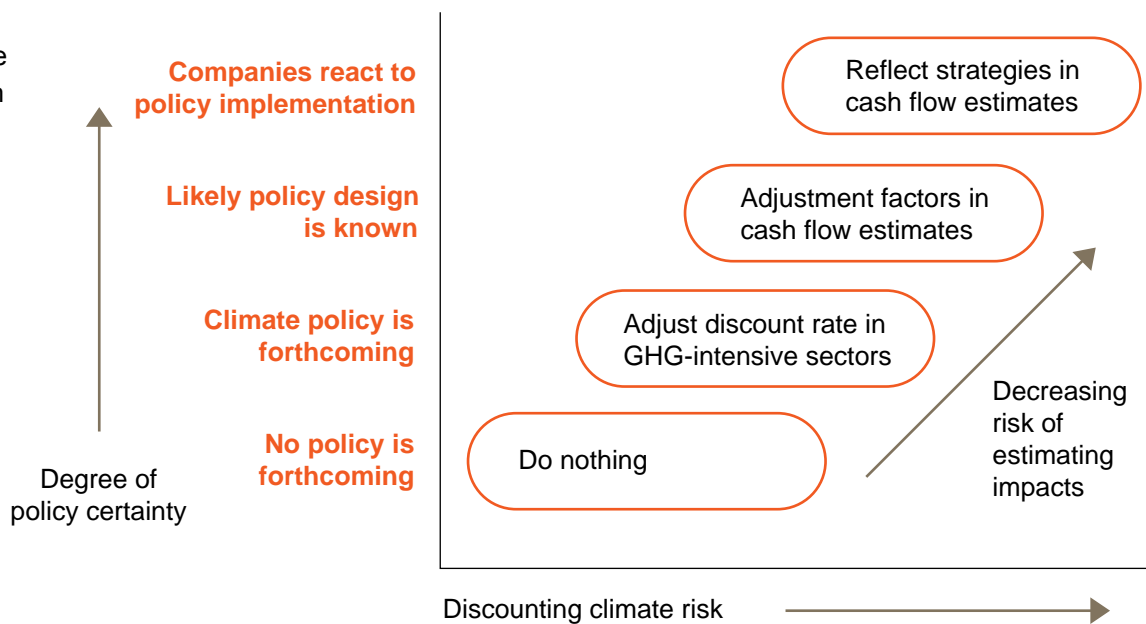
Expected cash flows likely to be affected by GHG constraints and carbon trading schemes

“This approach, though generally preferable in analytical terms to the risk-adjusted discount rate [...], is also highly dependent on general assumptions of policy stringency. The inclusion of risk-adjustment factors in cash flow estimates [...] will generally require explicit judgments about the magnitude of the financial impacts of climate policies. As a result, risk-adjustment factors, though a more robust tool, are again only as reliable as the underlying assumptions used to make the adjustments.”²⁵

Figure 8 illustrates the impacts of certainty of climate change policy on investment decisions.

Climate risk-adjusted discount rates adjust the security discount rate. In this approach “expected cash flows are unchanged, but the required rate of return (discount rate) is adjusted upward to incorporate the added potential risk from climate regulations”. This allows for the adding (subtracting) of a risk premium to firms in greenhouse gas-intensive sectors (cleaner assets / businesses). This opens the door to measure a company’s risk exposure (operational and financial) to climate change as well as the stakeholder (regulatory, public, and consumer) responses to climate change relative to industry competitors.²⁶

Figure 8:
Reflecting climate risk uncertainty in discounted cash flow analysis



Source: Adapted from World Resources Institute / Ceres

Corporate assessment needs to include opportunities for growth and drivers of change

The Goldman Sachs Approach

Goldman Sachs (GS)²⁷ targets investment managers and analysts by examining which sectors and investee companies are best placed for a de-carbonising future. GS makes two primary contributions to the design of a responsible investor analytical framework: assessment framework and appraisal methodology.

While the report focuses on listed equities, the **assessment framework** can be applied across asset classes mentioned in the Deutsche Bank Climate Change Advisors (DBCCA) report, with adjustments. Table 5 considers three key sectors in relation to opportunities for growth, modal shifts in demand, changed drivers in competitive advantage, and implications of climate transition.

The report uses a **five-step appraisal** process to evaluate a company's performance as outlined in Figure 9. First, a universe of companies is established. Next, data is collected from public sources including company financial and sustainability reports, Carbon Disclosure Project, research houses and so forth. Third, scores across a range of indicators are tabulated according to objective, predetermined criteria. Then, scores are combined to formulate an overall corporate performance score on climate change. This step may include weighting specific indicators more heavily in certain industries. Finally, to make a buy/sell/hold recommendation, company climate change scores are used along with financial performance indicators (return on capital invested, cash return on cash invested, etc.) and industry positioning.

Figure 9: Appraisal methodology used by asset managers and analysts apply objective measures of performance to identify the best placed companies in each sector



Source: Adapted from Goldman Sachs

Table 5: Assessment framework examines climate change impacts for select sectors to identify key performance drivers

	Energy	Transport	Finance
Opportunities for growth industries	Biofuel crops	Electric vehicles	Environmental risk management tools
	Biofuel refiners	Battery & fuel cell technologies	“Green” consumer finance
	Alternative & nuclear energy equipment & services	High speed trains	Energy Service Companies (ESCOs) (capital providers for energy efficiency investments)
	Alternative & nuclear generators	Electrification infrastructure	Venture capital investment in alternative technologies
Modal shifts in demand	Carbon capture & storage	Biofuel aerospace & automotive engines	
	Increasing investment in alternative & nuclear power generation, declines in fossil fuel	Shift from petroleum to electric/hybrid power trains	Increased demand for financing of low carbon technologies, reduction in fossil fuel based sources
Changed drivers of competitive advantage in established industries	Shift from fossil fuel transport to electricity in transport		
	Rising direct cost of carbon emissions	Increasing value of energy & carbon efficient transport	Increasing demand for environmentally targeted investment products
Implications of climate transition	Rising value of low carbon power generation technologies	Reduced demand for freight intensive products	Increasing value for environmental risk management
	Accelerating transition from fossil fuels to alternative sources of power	Increasing regulation of product emissions	Significant funding required by other industries to implement carbon abatement opportunities
	Focus on environmental legislation	Increasing funding/demand for electric/hybrid vehicles	Environmental impacts an increasing risk factor in capital allocation decisions
	Blurring of distinction between transport and power fuels	Technological shift required to sustain air travel	Prospect of increasing regulation has likelihood of incorporating environmental targets
	Increasing distribution of power generation as small scale technologies develop		
	Increasing pressure and incentives to promote energy efficiency		
	Source: Adapted from Goldman Sachs		

Note: *Energy* includes Oil Services, Oil & Gas, Electrical Equipment, and Electric Utilities. *Transport* includes Autos, Aerospace & Defence, Airlines, Road, and Rail. *Finance* includes Banks and Insurance.

ASrIA's Proposal for Next Steps

Bring together Asia's leading institutional investors on the issue of climate change

Mobilising capital to tackle one of Asia's most urgent challenges – shifting to a low carbon economy – requires effective financial solutions, backed up by a positive regulatory environment. Collaboration among finance and investment professionals alone cannot shift the market to internalize greenhouse gas emissions into project costs. Facilitating change within Asia's capital markets requires the active participation and coordination of all actors, including government policy makers, complemented by investor initiatives.

In Australasia, Europe and the United States a key factor for integrating environmental, social and corporate governance (ESG) criteria into the investment process and encouraging a supportive regulatory environment has been the active support of asset owners – including pension funds, insurance companies, endowments, foundations and family offices. As part of a more holistic approach to investing, as advocated by ASrIA and supported by its members, there is value for institutional investors in Asia in forming a working group on climate change to address the region's shift to a low carbon economy.

In general, Asia's institutional investors do not collaborate as much as their peers in Europe or Australia, however this may be changing. For instance, an investment group of sovereign wealth funds (Korea Investment Corporation, China Investment Corporation, Temasek and Abu Dhabi Investment) bought US\$900 million of preferred shares in U.S.-based Chesapeake Energy in 2010. This example demonstrates that co-investment opportunities exist for Asian investors and it illustrates that investment groups could make coordinated capital commitments and provide the impetus for regulatory changes to spur Asia's shift to a low carbon economy.

Asia needs more, better targeted investment to adapt to climate change and shift to a low carbon economy. The Association for Sustainable and Responsible Investment in Asia (ASrIA) is pleased to present this proposal for the establishment of an Asia Investor Group on Climate Change (AIGCC). The proposed investor group could help to mobilize necessary capital by increasing institutional investor understanding of the risks and opportunities of climate change and to accelerate the integration of climate change criteria into investment decisions.

PROPOSED:

Asia Investor Group on Climate Change (AIGCC)

Partnering with similar investor groups around the world, ASrIA proposes to bring Asia's institutional investors together to learn from each other, facilitate capital mobilisation and lobby for a positive regulatory environment to tackle the region's most urgent environmental challenge – shifting to a low carbon economy. Acting as a secretariat, ASrIA would support collective action to address environmental externalities and find financial solutions to support the shift to a low carbon economy in the region.

Similar investor collaborations on climate change already exist globally, in Australasia, Europe and the United States.

EXISTING:

Climate Change Working Group (CCWG) of the UNEP Finance Initiative

Global

The Climate Change Working Group (CCWG) raises awareness and communicates the problem of climate change to financial institutions, policy makers and the public at large. This is a global working group, however only two members are from Asia as of December 2010 (www.unepfi.org/work_streams/climate_change/working_group).

Institutional Investors Group on Climate Change (IIGCC)

Europe

The Institutional Investors Group on Climate Change (IIGCC) is a forum for collaboration on climate change for European investors. There are currently over 50 members, including some of the largest pension funds and asset managers in Europe, representing around €5 trillion in assets (www.iigcc.org).

Investor Network on Climate Risk (INCR)

North America

The U.S.-based Investor Network on Climate Risk (INCR) provides tools for investors to manage the risks and capture the opportunities posed by climate change. INCR is coordinated by Ceres, a coalition of investors and environmental groups working to advance sustainable prosperity. INCR was launched at the first Investor Summit on Climate Risk at the United Nations in November 2003 (www.incr.com).

Investor Group on Climate Change Australia/New Zealand (IGCC)

Australasia

The Investor Group on Climate Change (IGCC) is a collaboration of Australian and New Zealand investors focussing on the impact that climate change has on the financial value of investments. The IGCC recognises that the financial return on an investment is impacted by climate change. As such, the IGCC aims to ensure that the risks and opportunities associated with climate change are incorporated into investment decisions for the ultimate benefit of individual investors (www.igcc.org.au).

Conclusion

Many large asset owners and investment managers outside Asia are already integrating climate change and other ESG criteria into their investment process, using well-developed analytical frameworks. For these climate change investment pioneers, the analytical frameworks proposed by INCR, DBCCA and Goldman Sachs are not theoretical, but actual.

As one example of an investment institution considering climate change risks and opportunities, ASrIA member Universities Superannuation Scheme (USS), a major pension fund in the UK, is both an asset owner and an active investment manager. The Responsible Investing Unit within USS works side-by-side with the fund's traditional financial analysts to consider potential investments. The RI Unit's views regarding climate change and other ESG criteria are considered by USS's portfolio managers in tandem with the views of the fund's financial analysts. In addition, the RI unit works to educate the fund's traditional financial analysts and portfolio managers about the merit of integrating climate change and other ESG criteria into the investment process.

The relative lack of pressure in Asia for attention to climate change as part of investment is unfortunate, given that the fast-growing Asian economy is likely to account for a relatively high proportion of global infrastructure investment in the coming decades. Guiding that investment to projects that mitigate climate change and accelerate the shift to a low carbon economy is potentially of great benefit not only to Asia, but to the entire world economy.

While a small but growing number of major Asian asset owners – including most notably the Korean state pension fund – are leading the way in adopting responsible investing policies that take into account climate change this paradigm shift needs to become more pervasive in Asia.

This paper has highlighted the wealth of experience available elsewhere with developing a framework for integrating climate change criteria into investment analysis and has made recommendations for Asia's asset owners, investment managers and investment consultants to foster the development of a low carbon economy.

In addition, to help move the process along at a faster pace, we have proposed the establishment of an Asia Investor Group on Climate Change (AIGCC). ASrIA is prepared to take the lead in organizing this investor group, and to serve as its Secretariat. We welcome views from Asia's investment professionals about how such a group focusing on the implications of climate change for investment might be helpful to them, and suggestions for its initial work plan.

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