

Greenpeace

Guide for Pension Funds on Best Practice Responsible
Investment in Managing Climate Change

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TRUCOST

taking the environment into account

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ABOUT THE AUTHORS

Trucost helps companies and investors identify environmental risks, as well as opportunities to manage them. Trucost offers expert advice and research to institutional investors, major corporations, both public and private, and to Government departments and associated agencies. Coverage includes the FTSE All-Share, S&P 500, Russell 1000, Nikkei 225, DJ STOXX, MSCI AWD, ASX 200 and Emerging Market indices.

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Executive summary

This briefing outlines best practice for pension funds to manage climate change in their investments. It includes recommendations for the Norwegian Government Pension Fund – Global, one of the largest pension funds in the world, to support a submission by Greenpeace to a consultation on the Fund's Ethical Guidelines.

Key points include:

- Evidence is mounting that climate change impacts could reduce global economic growth by 5-20% annually. Governments are developing policies to stabilise greenhouse gas emissions within the next 15-20 years to avert dangerous levels of climate change.
- Many governments believe that a price of US\$20-80 per tonne of carbon emitted, imposed through taxes and emission trading schemes, is necessary to induce a low-carbon economy.
- All companies and sectors are likely to be affected by regulatory controls on emissions and carbon prices.
- Institutional shareholders have a fiduciary duty to protect shareholder value in the long-term, and should therefore address portfolio exposure to climate change risks.
- Trustees should include climate change criteria in investment mandates and fund manager evaluation to encourage the uptake and development of climate change risk management tools across equity investments.
- Trustees could develop a range of policies and processes to ensure climate change considerations are integrated into research, analysis, investment decision-making and portfolio management.
- Enhanced research can be used to help identify and address portfolio financial risks and opportunities driven by company carbon emissions.
- Pension fund mandates could be aligned with government policies to manage exposure to regulatory controls of portfolio returns. Trustees could set a target to reduce carbon dioxide emissions in line with global climate policy to reduce exposure to rising carbon costs in their holdings.
- Sector-specific criteria could be established to address risk in high carbon assets such as power stations and industrial plants most exposed to the costs of compliance associated with regulatory and market mechanisms to control emissions.
- Investment best practice on managing climate change issues in emerging markets focuses on engaging with companies to encourage improvements in disclosure and corporate governance, investing in renewable energy, energy efficiency and clean technologies, and supporting environmental research.
- The UK Environment Agency Pension Fund, London Pensions Fund Authority and Fonds de reserve pour les retraites (FRR) are among leading pension funds addressing risks to the value of investments from greenhouse gas emissions.

Specific recommendations for the Norwegian Government Pension Fund – Global include:

1. Reposition Ethical Guidelines to address financial liabilities associated with corporate greenhouse gas emissions. The Fund investment position could emphasise Sustainable Investing to provide a framework to incorporate carbon risks and opportunities into investment decision-making.
2. Guidelines could incorporate the UN Principles for Responsible Investment and guidance on climate change investing from investor initiatives on such as the Coalition for Environmentally Responsible Economies (CERES).
3. Outline climate change criteria to be considered in investment decision-making and active ownership practices.
4. Require fund managers to identify their approach to addressing climate change over specified timeframes. Require fund managers to understand the exposure of their portfolios to carbon liabilities relative to benchmark.
5. Norges Bank could outline how it expects companies to address climate change issues to support active ownership activities. Fund managers could establish principles for engagement on climate change to address exposure to carbon liabilities. Strengthen guidance for engagement and proxy voting activities to incorporate investment-relevant climate change criteria.
6. Identify carbon liabilities and opportunities in portfolios to target companies for engagement and evaluate the outcome of ownership activities. Establish a common platform to share company data on climate changes issues between the Ministry of Finance, Council on Ethics and Norges Bank to better co-ordinate divestment, negative screening and other active ownership activities.
7. Deploy a variety of investment strategies to manage carbon risks in equity portfolios. These could include best-in-class stock selection and positive screening using a carbon overlay. Establish climate change criteria for holdings in emissions-intensive, high-risk sectors such as Utilities and Basic Resources. Allocate assets to climate-related investments where this could enhance returns.
8. Portfolios in the Norwegian Government Pension Fund could be carbon optimised to reduce exposure to carbon liabilities, reward carbon efficiency, maintain diversification and preserve investment returns relative to the benchmark. Fund managers could cap the rebalancing of holdings in line with the Ministry of Finance tracking error limit of 1.5%, and ensure ownership is limited to 10% of the voting equities of companies.
9. Monitor carbon and financial performance of portfolios that deploy climate change strategies to develop expertise and reduce carbon exposure with moderate risk to the value of assets. Results could inform future strategies and tools to manage financially material carbon factors under a carbon-constrained economy over the long-term.

Introduction

The Norwegian Government is currently consulting on a review of Ethical Guidelines for the Norwegian Government Pension Fund – Global.¹ This briefing aims to inform a submission by Greenpeace to the consultation. Consultation responses will contribute to the Finance Ministry's evaluation, which will be presented to the Norwegian Parliament in a White Paper on the management of the Pension Fund in Spring 2009.

Fund investment strategy and active management

Formerly known as the Norwegian Petroleum Fund, the Norwegian Government Pension Fund – Global was established in 1990 to manage Norway's petroleum wealth. Entire petroleum revenues – from production of approximately 250 million cubic metres per year – are transferred to the fund.

"Accumulation of capital in the Fund reflects the depletion of a non-renewable resources, which is exchanged for financial assets through the Fund's investments."²

The Fund is valued at approximately US\$400 billion and is invested with long-term considerations to protect inter-generational wealth. The Fund is only invested outside of Norway.

Equities account for 60% of the portfolio. The 40% invested in fixed income instruments is likely to be reduced to 35% as 5% of the portfolio is allocated to real estate.

The long-term equity investment strategy is reflected in a benchmark portfolio that includes an equities index benchmark of almost 7,000 companies in 27 countries. The benchmark portfolio will be expanded to include all emerging markets (FTSE).

The Fund owns over 1% of European equities and 0.5 % of global listed equities. Approximately one-third of the portfolio (US\$ 130 billion) is invested in North America.

Strategic benchmark portfolio (percentage shares)

	Asset class	Europe	Americas / Africa	Asia / Oceania
Equities	60	50	35	15

There is a legal requirement for fund spending to be aligned with government spending priorities. The Norwegian **Ministry of Finance**, as the fund owner, defines the mandate and monitors and evaluates performance. The Fund's investment strategy is to maximise financial return with moderate risk.

The Ethical Guidelines underpin active management – an important aspect of the Fund's investment strategy to seek excess returns. The Ministry of Finance has set a risk limit in active management, with an expected tracking error of 1.5 percentage points relative to the benchmark. This limits how much the expected return on actual investments may differ from the expected return on the benchmark portfolio.

¹ Guidelines http://www.regjeringen.no/en/sub/Styret-rad-utvalg/ethics_council/Ethical-Guidelines.html?id=425277; Consultation http://www.regjeringen.no/upload/FIN/Vedlegg/aff/evaluation_ethical_Guidelines.pdf

² Source: Speech by Governor Svein Gjedrem at conference "commodities, the Economy and Money", Calgary, Canada, 20 June 2008

The limit on ownership stakes is being increased from 5% to 10% of the voting equities of listed companies. The average ownership stake in companies is about 0.8%.

Negative screening is practised to exclude companies that produce weapons prohibited under international law. Companies may also be excluded from the investment universe due to unacceptable ethical violations in conduct, including severe environmental degradation.

The Ministry of Finance decides on the exclusion of companies based on recommendations by the Council on Ethics, which assesses companies against criteria outlined in the Ethical Guidelines. The Council of Ethics reports annually on its recommendations for exclusion.

Norges Bank manages some 150 sub-portfolios, both internally and through external asset managers. Norges Bank implements the investment strategy by investing assets and exercising ownership rights mainly through engaging with companies and voting at general meetings to seek to influence their policies and practices.

These rights are exercised to promote long-term financial returns, based on the UN Global Compact and the OECD Principles of Corporate Governance and Guidelines for Multinational Enterprises. The Fund's Ethical Guidelines state that ownership rights should be based on a long-term horizon and broad diversification in the investment universe.

Norges Bank reports on activities to practice ownership rights. Accountability, transparency and disclosure of information are key to the investment strategy. An annual report discloses a list of every investment held at the end of the year, and voting activities are disclosed.

The exercise of ownership rights focus on areas including corporate governance, child labour and climate change, which was emphasised in 2007.

This guide aims to identify best practice in managing climate change risks and opportunities in pension funds.

Scope

Greenpeace has asked Trucost to provide a report to outline best practice for pension funds for managing climate change in their investments. This will be used to support a submission by Greenpeace to the consultation on the Ethical Guidelines of the Norwegian Government Pension Fund – Global.

The Report will outline current best practice and include a number of examples and case studies. Areas covered include:

SECTION A

- Trucost investment position on climate change in pension fund mandates.
- Recommendations for Norwegian Government Pension Fund – Global approach to climate change.
 - Investment position on climate change in pension fund mandates and scope of issues to address.
 - Establish framework to respond to implications of changing scientific evidence and government policy frameworks for investments.
- Exercise of ownership rights: Engagement and proxy voting principles and practices.
 - Policy on active ownership, scope of issues and process to monitor outcomes, evaluation criteria, timescales to review efficacy of framework.

SECTION B

- Managing climate risks from regulatory GHG controls:
 - Establish criteria for climate related negative exclusion to reduce exposure to carbon risks.
 - Positive screening based on carbon-intensity relative to benchmark sector average.
 - Criteria for selection for maximum effect across investments.

SECTION C

- Emerging markets/developing countries: Collaboration and capacity building on ESG research and responsible investment; corporate disclosure on ESG issues.
- Climate-related investments.
 - Driving demand for energy efficiency and renewable energy across assets.
 - Positioning portfolios for a low-carbon economy.

SECTION D

- Best practice in addressing portfolio exposure to climate risks: Case studies.
- Further opportunities to manage climate change value-drivers in pension funds.

SECTION A

1. Trucost investment position on climate change in pension fund mandates

Trucost's approach to climate change focuses on the financial implications of corporate greenhouse gas emissions to investments. This approach is based on growing evidence that regulations to control emissions will have significant economic repercussions, affecting investment returns.

At present most greenhouse gas (GHG) emissions do not carry a cost that reflects the damage they cause to the environment. Markets act inefficiently when pollution outputs treat environmental issues as off-balance sheet "externalities". An example is the cost of the acidification of soil and water borne in Scandinavia, but caused by industrial companies elsewhere in Europe, which historically treated the pollutants of sulphur dioxide and nitrogen oxides as externalities.

Although greenhouse gases accumulate at a global level and climate change impacts are taking place worldwide, sources of man-made emissions can be identified at a company level. Governments are increasingly applying a price to carbon in order to internalise damage costs onto company balance sheets and reduce the risks of the most severe effects of climate change on economies and societies worldwide. Business as usual could result in a 5-20% loss in global GDP annually, according to the 2006 UK Government Stern Review on the Economics of Climate Change. These economic risks are unevenly spread, with countries such as Australia and India particularly vulnerable to climate change impacts such as more frequent and severe incidents of drought and flood.

The Stern Review estimates that strong and early mitigation could cost around 1% of annual global GDP by 2050. Industrialised countries, responsible for the majority of man-made greenhouse gases currently in the atmosphere, are likely to carry a larger share of mitigation costs.

Government policies to address climate change

The UN Kyoto Protocol Treaty in force since 2005 requires 36 industrialised countries to cut GHG emissions by at least 5% against the baseline of 1990 between 2008-2012. More than 180 countries agreed in Bali in December 2007 to negotiate a new international treaty to reduce global greenhouse gas emissions beyond 2012.

The "Bali Action Plan" recognises that deep cuts in global emissions are needed, in line with advice from the Intergovernmental Panel on Climate Change (IPCC). The IPCC says that to stabilise emissions at 450-550ppm, the flow of developed country emissions should be cut by 25%-40% by 2020, and by 80%-95% by 2050.³

G8 nations – Japan, Britain, Canada, Germany, France, Italy, Russia and the United States - agreed in July 2008 to work towards a goal to at least halve emissions by 2050. Talks to

³ Working Group 3 <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-ts.pdf>

reach an international climate agreement on targets from 2013 onwards are set to culminate in Norway in December 2009.

Norway's Kyoto target is to limit emission rises to 1% above 1990 levels during 2008-2012. Although emissions are currently around 10% above, Norway aims to exceed its Kyoto Protocol target by 10%. The goal would shift the target to a 9% reduction from 1990 levels – which amounts to a reduction of approximately 20% from current levels.

The Norwegian Government has agreed to become carbon neutral by 2030, making Norway the first country to set a target to reduce its net greenhouse gas emissions to zero. The country set a goal to unilaterally cut emissions by 30% compared to 1990 levels by 2020.

However, GHG emissions are rising. A 3% increase in 2007 was largely due to flaring at a new Liquefied Natural Gas (LNG) plant. GHG emissions from the petroleum industry nearly doubled between 1990 and 2007.⁴

The Norwegian Government white paper on climate policy sets out proposed measures including trebling of investment in energy efficiency and renewable energy, up to Nkr10bn (€1.25bn) over the next five years and a ban on oil-fired heating in new buildings. A carbon tax has been in place since 1991, and the Norwegian emission trading scheme now links to the EU Emission Trading Scheme (EU ETS). The EU ETS Directive applies in Norway from 2008, but the scheme is adapted with some stronger requirements for GHG reductions.

Under the UN Kyoto Protocol, 15 EU member states agreed a joint target to cut emissions by 8% on 1990 levels by 2012. Most EU countries are not on track to meet their share of the target. Carbon taxes are planned and under the expanded EU Emissions Trading Scheme, more companies will have to make deeper cuts between 2012 and 2020. Deutsche Bank and UBS predict that the EU ETS carbon price will reach up to €40 per tonnes of carbon dioxide between 2010-2013. The penalty for failing to comply with permit limits is €100/tCO₂.

A 2007 European Commission Green Paper states that "a swift transition to a low carbon economy is the central pillar of the EU's integrated climate change and energy policy". The EU has agreed a target to cut emissions of greenhouse gases by 20% on 1990 levels by 2020. The limit will be tightened to 30% if other developed countries make a similar commitment and emerging economies such as China, India and Brazil take adequate action.

Many governments in developed countries and emerging markets are developing policies such as performance standards to drive the uptake of technological solutions and changes in practices to mitigate GHG emissions. Most companies are likely to have the widest exposure to emission controls through market-based instruments.

Several countries and regions have introduced or are planning cap-and-trade schemes. Carbon prices are being introduced through emission trading schemes in regions including the EU, New Zealand, Taiwan, South Korea, Canada, several US states and Australia. Emission trading schemes set limits on the amount of greenhouse gases that can be emitted by certain sectors, and allow companies to trade allowances or carbon permits to meet caps at a facility level. Market-based instruments aim to create a price for carbon so that emitters face a marginal cost of emissions that reflects the damage they cause.

⁴ http://www.ssb.no/english/subjects/01/04/10/klimagassn_en/

Emissions trading schemes target emission-intensive sectors such as power generators. The power sector accounts for 24% of global GHG emissions, with a further 14% coming from industry. Changes in industrial process and energy supply and use are expected to deliver 60-80% of global greenhouse gas reductions

Utilities are likely to try to pass on carbon costs in electricity prices. This would drive up operational costs for energy-intensive industries. Carbon prices can be applied to emissions from the electricity purchased by a company to identify exposure to carbon costs through electricity consumption.

The carbon intensity of companies relative to sector peers will affect their ability to pass on carbon costs, and in turn, their profitability. Where carbon costs are passed on, input costs will rise for energy-intensive manufacturing industries in particular. As policy measures strengthen to induce a shift to low-carbon industrial processes and energy sources, greenhouse gas emissions will become increasingly material to companies and investors economy-wide. Carbon prices encourage emitters to invest in alternative, low-carbon technologies and consumers of GHG-intensive goods and services are expected to respond to relative price increases by changing their spending patterns. Shifts towards low-carbon and energy-efficient products and processes, with potential cost savings, will drive changes in competitive dynamics.

“The effects of putting a price on carbon will be profound. Indeed, in its ability to change the economy over time, the Carbon Pollution Reduction Scheme is likely to be on par with past economic reforms such as the reduction in tariffs or deregulation of the financial system. Placing a limit and a price on emissions will change the things we produce, the way we produce them, and the things we buy.” Carbon Pollution Reduction Scheme, Green Paper, Australia Government Department of Climate Change, July 2008

Pricing carbon

Norway joined New Zealand and several US states, Canadian provinces, and European countries to form an International Carbon Action Partnership in 2007 to work towards a global cap-and-trade market. A long-term view on the carbon price is particularly important for investments in assets such as power stations, industrial plant and buildings, which often have time horizons lasting decades.

The Stern Review warns that in the transitional period, while credible carbon pricing is being established worldwide, there is a risk that investment decision-making may not factor future carbon prices into decision-making adequately. The cost of emissions of carbon dioxide and other greenhouse gases needs to be robust enough to create a clear price signal to inform investment decisions and encourage a shift to a lower-carbon economy.

The Stern Review suggested a social cost of carbon of around US\$85 per tonne of CO₂. The IPCC says the carbon price needed to deliver sufficient GHG reductions is US\$20-80 per tonnes of greenhouse gas emissions, measured as their carbon dioxide equivalent (CO₂e). The International Energy Agency has estimated that a 50% cut in emissions would require a price for carbon dioxide (CO₂) of \$200-\$500 per tonne.⁵

⁵ http://www.iea.org/Textbase/press/pressdetail.asp?PRESS_REL_ID=263

Carbon prices of this magnitude would have profound consequences on the profitability of companies which will be affected by the degree to which corporate activity is dependent on carbon emissions and the ability of companies are able to pass on these costs in higher prices. In other words there will be winners and losers. This means that the CO₂ and other GHG emissions of companies are of investment relevance to asset owners and fund managers; the GHG emissions or "carbon" intensity of companies is already beginning to affect investment returns.

"We think a regulatory drive will impact all companies across all sectors, not just the heavy emitters," *Carbon Leaders; Quality win-win stocks*, Merrill Lynch, August 2007

Managing risk in a transition to a low carbon economy

Cap-and-trade schemes and carbon taxes will change cost structures for all industries. As carbon costs are passed on, demand for certain goods may decline. The carbon profiles of companies will help determine which are most affected. Companies that rely heavily on carbon-intensive operations relative to sector peers could be most exposed to rising carbon costs. High emitters which are unable to pass on a large portion of carbon costs without losing market share to relatively low-carbon competitors can expect their profitability to fall significantly. Companies with relatively low exposure to direct carbon costs, as well as to indirect costs passed on in input prices, stand to gain competitive advantage. The carbon pricing framework presents opportunities for resource-efficient, low-emission companies, as well as providers of renewable energy and energy efficiency technologies.

Corporate carbon emissions are an important source of risk and opportunity at a portfolio level. Companies' greenhouse gas emissions expose portfolios to the risk of carbon costs imposed by government policies to control climate change. Portfolios comprised of companies which are carbon-efficient relative to sector peers may be less exposed to escalating carbon liabilities. Portfolios with small carbon footprints will be better placed during the transition to a low-carbon economy.

Pension and sovereign wealth funds which invest across indices and decades have a duty to consider all financially material risks to investment returns over the long-term. Since climate change can affect company performance and the performance of economies, it should be included as a financial concern in the interests of pension fund beneficiaries. Climate change issues will increasingly be integrated into investment decision-making to manage risk and seek to deliver enhanced investment returns.

Lehman Brothers, in its report *The Business of Climate Change II*, September 2007, says:

"Our overall judgement is that the potential for asset price adjustment is considerable... Markets anticipate even slow-moving forces, such as climate change; asset prices stand to be affected markedly sooner by policy; and markets anticipate, not only climate change itself, but policies to address it.... As responsibilities starts to be assumed by finance ministries and treasuries, the cost of policies will become a primary preoccupation."

Responsible climate change investing will become relevant to all mainstream investment strategies. As carbon costs become increasingly financially material to investors, carbon

intensity will be factored into capital allocation decisions. Asset valuations are set to take greater account of corporate carbon performance.

Institutional investors are beginning to require fund managers to manage carbon exposure and maximise opportunities. Several fund managers are beginning to position themselves to reduce climate-related risks and invest in potential “winners” to enhance returns.

Addressing climate change risk is consistent with fiduciary responsibility as part of long-term responsible investment and asset owners can provide the frameworks and incentives for the investment community to develop tools to quantify and integrate climate change factors into decision-making in order to protect financial performance. Trustees could therefore include climate change criteria in investment mandates and align these with government policies to reduce exposure to risks from company greenhouse gas emissions. Some potential strategies for trustees and fund managers to prepare portfolios for policy constraints are outlined below.

2. Recommendations for Norwegian Government Pension Fund – Global approach to climate change

Establish an investment position on climate change in pension fund mandates.

Policies: Reposition Ethical Guidelines to address financial implications of corporate greenhouse gas emissions on investment returns.

Treating climate change as an extra-financial environmental issue can no longer be considered prudent, given its financially material implications for companies and economies.

The Ethical Guidelines are based on the premise that environmental, social and governance issues are values-based. Corporate greenhouse gas emissions are therefore treated as an “ethical” issue rather than a risk that could affect the value of equity holdings.

A liability-driven approach to climate change in equity investments would see greenhouse gas emissions treated as a financial risk. The Fund could establish “Sustainable Investing” rather than “Ethical” guidelines which provide a framework to address climate change as a financial risk. This would provide the foundation to incorporate carbon risks and opportunities into investment decision-making to support the mandate to generate excess returns with moderate risk.

Establish investment framework, scope of issues to address and timeframe to respond to financial implications of climate change impacts and regulatory controls on GHGs.

Framework: Incorporate the UN Principles for Responsible Investment into the Guidelines.

As a signatory to the UN PRI, the Norwegian Government Pension Fund has committed to applying six principles to align investments with consideration of environmental, social, and corporate governance (ESG) issues, on the basis that these can affect the performance of investment portfolios. Principle 1 is to incorporate ESG issues into investment analysis and decision-making processes.

Integrating the principles into Sustainable Investing Guidelines would help ensure they are implemented in relation to climate change factors in equity investments.

The Framework could require baseline carbon measures to be conducted on all portfolios in order to understand their overall exposure to climate change regulations relative to the benchmark. This would require, for example, fund managers to understand the carbon emissions of the companies in their investment universe using environmental data providers such as Trucost.

The Framework could also incorporate recommendations on climate-related investment issues from organisations such the Coalition for Environmentally Responsible Economies (CERES) and Investor Network on Climate Risk (INCR). In particular, CERES has produced recommendations on “Framing climate risk in portfolio management”.⁶

⁶ CERES <http://www.incr.com/NETCOMMUNITY/Document.Doc?id=166>

Scope: Expand policy on active ownership to go beyond UN Global Compact in order to address climate change factors from an investor standpoint.

The UN Global Compact includes broad environmental criteria. However, a more targeted and investment-focussed approach is needed to integrate climate change risks and opportunities into equity portfolios. Current active management practices target companies where there is considered to be a risk of “severe environmental damages”. This approach may be useful where damage is localised and sources easily identifiable, for example for mining activities. However, a clear definition of what constitutes “severe environmental damages” and an acceptable level of risk would help improve accountability and transparency on company selections.

It is particularly difficult to apportion responsibility for potentially severe global environmental impacts such as climate change at a company level. A more precautionary, risk-based approach would be to address the risk of the Fund contributing to significant greenhouse gas emissions and in turn climate change impacts. Supplementary guidance could outline how fund managers should build on the UN Global Compact principles to address climate change factors within the investment strategy. This could be used to evaluate fund managers on consideration of material climate change risks.

Climate change guidelines could be developed jointly between the Ministry of Finance and Norges Bank and updated more readily than the Sustainable Investing Guidelines, in order to reflect emerging evidence of potential economic consequences of severe climate change impacts in particular regions, as well as the introduction and escalation of carbon costs in different jurisdictions.

Timeframe: Identify how climate change criteria will be implemented through investment decisions and active ownership activities during specific timeframes.

Require fund managers to outline their approach to identifying and managing climate change factors in the long term (e.g. to 2100). However, carbon costs are already affecting companies and are likely to escalate to 2050 in light of government carbon reduction targets. Fund owners and managers should outline their strategy and resources to identify and address carbon risks and opportunities in the interim, in line with financial metrics and climate policies. For instance, over the four-year period from 2011-2014 as well as to 2020/30 and 2050.

3. Exercise of ownership rights

a. Engagement activities

Outline investor expectations on climate change.

Norges Bank Investment Management (NBIM) could identify expectations of corporate carbon strategies and performance to address the potential implications of climate change impacts and regulations for financial performance. NBIM has set out “expectations for corporate performance with regard to preventing child labour and promoting children’s rights” in *Investor Expectations on Children’s Rights*. NBIM could similarly outline how emissions-intensive companies operating in high-risk sectors can be expected to disclose information on greenhouse gas emissions and regulatory risks, and address climate change through their business activities over a long-term investment horizon.

These climate change expectations could underpin active ownership activities. For instance to identify the scope of issues to address, select companies for engagement and establish evaluation criteria to monitor outcomes of dialogues.

Expectations could be based on areas including:

- Corporate greenhouse gas emissions disclosure and performance.
- Corporate strategy to address operational carbon risks and opportunities.
- Corporate strategy to identify marketplace opportunities and risks.

Establish engagement principles for climate change.

NBIM states in an article outlining Norges Bank’s priorities in corporate governance work in the coming years that it aims to address exposure to large-scale environmental changes and environmental destruction by including “environmental factors that could impact most on the markets’ long-term sustainability... in corporate governance work.”

NBIM recognises that the economic risks of climate change “is a good example of the type of environmental threat that NBIM must bear in mind as an active shareholder.”

However, NBIM states that

“Each individual portfolio company’s emissions of carbon dioxide and other greenhouse gases are generally neither illegal nor immoral per se. It is the aggregate amount that is the problem. It is also unrealistic for companies that produce carbon dioxide and other greenhouse gases to cut their emissions without statutory requirements in this area which apply both to them and to their competitors. Companies may be able to reduce greenhouse gas emissions on their own initiative for economic reasons, in order to improve their profile and credibility, or to be better equipped to meet the more stringent statutory requirements of tomorrow. In many cases, NBIM will support initiatives to strengthen such incentives... However, it is political initiatives and market regulations, both national and international, that will be the key factor in the fight against serious climate change.”⁷

⁷ [tp://www.nbim.no/Templates/Report___65342.aspx](http://www.nbim.no/Templates/Report___65342.aspx)

NBIM's position should provide clear expectations that significant emitters will need to deliver carbon reductions under a precautionary approach to climate change. Energy and resource inefficiency are fundamentally linked to higher carbon remissions, and increase exposure to rising costs for inputs such as electricity, with financial impacts.

NBIM could request that companies measure and report their greenhouse gas emissions and exposure to market regulations that will result in carbon costs to ensure they take responsibility for their emissions and manage carbon efficiency.

This would support implementation of two of the principles under the UN Global Compact:

Principle 7: "Businesses should support a precautionary approach to environmental challenges"

Principle 8: "Businesses should undertake initiatives to promote greater environmental responsibility"

In the EU, large companies are obliged to report on environmental matters in a Business Review, where appropriate, under the EU Accounts Modernisation Directive. The Transparency Directive may increase the liability of companies and their directors with respect to accuracy of company reporting.

NBIM's ownership activities on climate change are largely limited to targeting companies lobbying against government regulations to address climate change, where such initiatives would benefit NBIM and other "universal" investors.⁸

The Consultation paper – Evaluation of the Ethical Guidelines for the Government Pension Fund – Global, states, "Engagement and voting activities on climate change issues particularly aim to encourage corporations to work with rather than against government on policies that aim to reduce greenhouse gas emissions. The purpose of this is to support legislation that could "reduce the risk of serious negative economic implications of climate change".⁹

In 2007, Norges Bank Investment Management analysed more than 100 companies in the portfolio to identify those most active in lobbying on climate issues, and is in contact with some 20 companies on climate legislation, mainly in the energy and transport sectors.

However, in its 2007 Annual Report, Norges Bank recognises the potential conflict of interest in companies and investors seeking to shape new legislation:

"Both in Europe and the US, the infrastructure for the supply of energy is dominated by fossil fuels, and the respective industries play an active role in shaping legislative processes. Financial considerations related to earnings in the short to medium term regularly clash with more long-term financial considerations...It is in the interest of NBIM's portfolio for the worst-case scenarios for climate change to be avoided, and this is an important premise for all of our dialogues with companies in this field. It is also NBIM's interest that the authorities in each individual country, nationally and through international co-operation, choose the most cost-effective solutions which

⁸ http://www.nbim.no/Templates/Report___65342.aspx

⁹ http://www.nbim.no/Templates/Report___65342.aspx

serve our portfolio's earnings and sustainability in the longer term." *Norges Bank 2007 Annual Report*

Governments need to balance industrial lobbying for climate-policies that focus on short-term cost efficiencies for certain sectoral interests against an equitable distribution of carbon reduction requirements across economies and societies, and the adequacy of actions to stabilise greenhouse gas emissions at an acceptable level of risk.

Encouraging companies to work constructively on climate policies is important, and Norges Bank's position could more strongly emphasise the need for corporate climate policy to be translated into measurable action and performance improvement.

During 2008-10, NBIM's dialogue will be based supporting companies "with the financial arguments" to support climate "solutions", on the assumption that there will be large-scale, international technological progress during this period. This position needs to be strengthened to seek excess returns through existing climate-related opportunities.

Greenhouse gases emitted by companies within investment portfolios already present financial risks under emission trading schemes. Existing investments in long-lived, high-carbon assets remain exposed to carbon costs for years to come. Further investments in carbon-intensive industrial plant could lock economies into a high-carbon trajectory, making future mitigation efforts more expensive and exposing portfolio holdings to significant carbon costs. A clear strategy is needed identify and address these risks to Fund returns through tools including engagement programmes.

b. Enhanced analysis to identify portfolio carbon risks.

To ensure the efficacy of a framework to manage carbon risks across portfolios, adequate resources need to be allocated to environmental research and engagement activities.

Norges Bank recognises in its 2007 Annual Report that:

"The potential costs of serious climate change could lead to substantial costs for the portfolio. There is a growing consensus in academic circles that measures to limit climate change today will be far more cost-effective than attempts to repair the damage once it has been done. NBIM's analysis is also based on a growing consensus in many sectors and industries that there is a need for greater certainty about the future legislative and regulatory framework."

Although uncertainties remain on regulatory frameworks to address climate change, the Bali roadmap and national initiatives indicate the policy trajectory towards carbon constraints. Instead of a "wait and see" approach, fund managers can take a proactive approach to positioning portfolios for future carbon constraints. A precautionary approach to environmental challenges, as advocated under Principle 7 of the UN Global Compact, requires the "systematic application of risk assessment".¹⁰

¹⁰ http://www.unglobalcompact.org/Issues/Environment/Principle_7.html

To help identify companies that contribute the greatest exposure to portfolio-wide carbon risks, fund managers can focus on systematically identifying the quantities and potential costs of carbon emissions emitted by companies.

Pension funds and fund managers have begun to use carbon footprint data to understand and measure the carbon exposure of companies within their portfolios.

Carbon risk exposure can be measured by:

- Assessing the absolute level of GHG emissions produced by each company in the portfolio, expressed in carbon dioxide equivalents (CO₂e), including the direct and first tier indirect emissions of constituent companies (see Trucost Methodology, Appendix 1)
- Allocating carbon emissions to funds/individual portfolios in proportion to equity ownership.
- A carbon intensity measure is often used to compare companies of different sizes and industries. The most stable measure of carbon intensity is to identify greenhouse emissions relative to turnover. Companies with a higher carbon intensity are more dependent on fossil fuels and processes which produce greenhouse gases to generate turnover, and may be at greater financial risk from the internalisation of carbon costs.
- Using these traditional financial metrics allows investors to compare company exposure to existing and expected regulations that will impose costs through a price on carbon emissions.
- Carbon costs can be applied to absolute emissions to identify exposure under emission trading scheme. The price of carbon credits under an emission trading scheme could be used. However, different facilities within a multinational company may be covered by different schemes with a range of carbon prices. Until a global carbon trading system is established, fund managers could use the average EU Emission Trading Scheme carbon price of €24¹¹ per tonne of carbon to assess the financially material risk exposure of emissions from companies within portfolios.
- Carbon costs can be measured relative to turnover or subtracted from earnings before interest, tax, depreciation and amortisation (EBITDA) to identify a company's potential vulnerability to the internalisation of carbon costs.

In order to demonstrate how carbon risk could be assessed within the Norwegian Government Pension Fund – Global, Trucost has identified carbon liabilities associated with two holdings in the portfolio: RWE Ag and Xcel Energy Inc.

RWE AG: The Norwegian Government Pension Fund owns 0.746% of RWE AG,¹² one of several energy and carbon-intensive companies already affected by carbon costs under the EU Emission Trading Scheme. Over-allocation of allowances during the first “learning” phase of the scheme from 2005-07 led to a collapse in the carbon price. However, tighter caps on emissions in phase two from 2008-2012 resulted in an average carbon price above €24/tCO₂ during the first six months of 2008.

¹¹ Average carbon price under the EU ETS January-June 2008

¹² As at 31 December 2007

As a result, carbon costs have increased for RWE, a coal-dependent European power generator. RWE AG has had to purchase more allowances at a higher carbon price. The company's carbon costs amounted to €583 during the first six months of 2008, compared with €37 million during the same period in 2007. This contributed to a 5% fall in earnings before interest, tax, depreciation and amortization (EBITDA) and an 8% drop in operating profits during the first half of 2008.

The utility expects to spend €5-7.5 billion on carbon allowances between 2008-2012 to cover a 60% shortfall. To identify exposure to future carbon costs, carbon prices can be applied to greenhouse gases emitted from operations. For example, to identify the financial risk to RWE under EU ETS plans to auction 100% of EU Allowances to power generators from 2013, carbon costs can be applied to the company's total direct emissions. If RWE has to purchase permits for all of its projected 140 million tonnes of CO₂ emissions at permit prices of €40/tCO₂¹³, it could spend €5.6 billion a year on carbon credits from 2013.¹⁴

As parts of its strategy to reduce emissions, RWE aims to retrofit existing lignite-fired power plants with CO₂ sequestration units by 2020, however the technology is still in the early stages of development for use in power utilities. The "silver bullet" of carbon capture and storage (CCS) requires suitable geological sites and CCS is associated with technical, liability, safety and environmental risks. The process of capturing CO₂ and sequestering it underground is energy intensive and could increase fuel cost by up to 20%.¹⁵ The IPCC estimates CO₂ capture costs of €10.37 to €51.84 per tonne for coal and gas-fired power plants.¹⁶ Climate Change Capital, at a British-Norwegian workshop on CCS in April 2008, estimated that CCS costs could amount to €1 bn per plant.¹⁷

Xcel Energy: The Fund owns 0.234% of the US Utility company. Following a subpoena from New York Attorney General Andrew Cuomo, Xcel Energy agreed in August 2008 to disclose greenhouse gas emissions and financial risks associated with climate change in its annual filings.¹⁸

Trucost, which maintains the world's largest repository of greenhouse gas emissions, holds carbon data on both RWE AG and Xcel Energy.

Trucost has allocated greenhouse gas emissions from the two companies to the Norwegian Government Pension Fund in line with ownership in order to demonstrate how the carbon footprint of the Fund or individual portfolios could be measured (see page 21).

¹³ Carbon allowances under the EU ETS are expected to rise to €40/tCO₂ between 2010-2013, according to Deutsche Bank, Carbon Finance, 4 June 2008

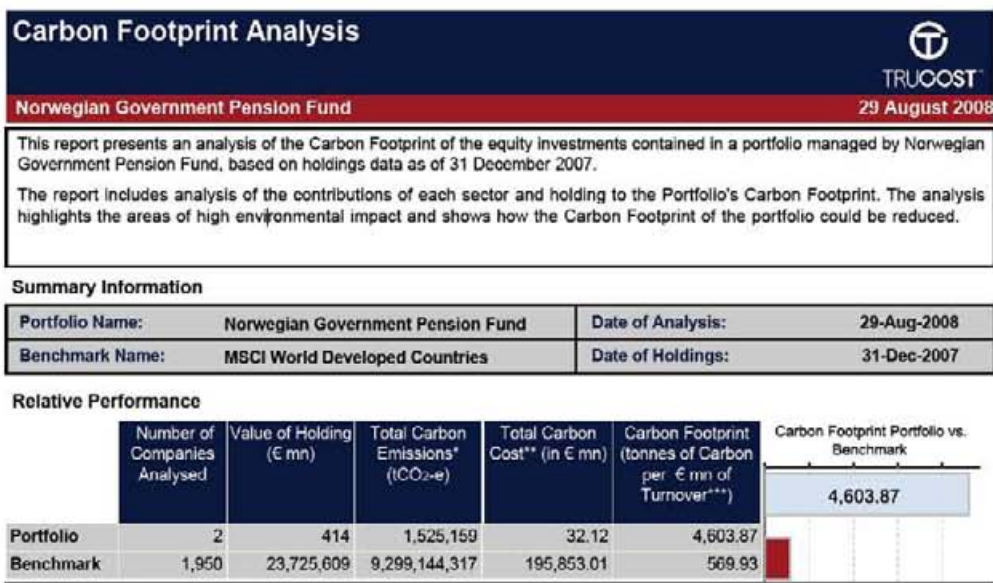
¹⁴ RWE has set a target to reduce emissions to 140 mtCO₂ by 2012. The target includes plans to purchase credits for 18^m mt/annum under the Kyoto Protocol Joint Implementation Scheme and CDM, at a cost of €10-€12/t.

¹⁵ Going underground, *Trading Carbon*, Vol 02, Issue 04, May 2008

¹⁶ US\$15-US\$75, Special Report: Carbon Capture and Storage, Intergovernmental Panel on Climate Change

¹⁷ <http://www.ccsassociation.org/docs/2008/23%20April%202008/2%20Tony%20White%20-%20Climate%20Change%20Capital%20%20%2023%20April%202008.ppt#382,4>, When CCGT sets the marginal power price, carbon price for CCS to compete is very high

¹⁸ http://www.xcelenergy.com/XLWEB/CDA/0,3080,1-1-1_15531_46991-49228-0_0_0-0,00.html; see also Point Carbon, 27 August 2009, Xcel to disclose climate change risks to investors



Based on holdings as at 31 December 2007 in RWE and Xcel Energy alone, emissions associated with the fund would amount to 1.5 million tonnes of carbon dioxide equivalent (CO₂e). This equates to almost 2.8% of Norway's emissions of 55 million tonnes of CO₂e in 2007.

The carbon footprint of the portfolio would be 4,604 tonnes of greenhouse gas emissions (measured as their carbon dioxide equivalent) per € million invested. Trucost has illustrated how a Fund or portfolio carbon efficiency can be compared with the carbon footprint of a chosen benchmark using the MSCI All World Developed index, which has a carbon footprint of 570 tonnes of CO₂e/€ million.

Applying a carbon price of €21 per tonne¹⁹ to 1.5 million tonnes of CO₂e emissions allocated to the Fund, the two companies contribute €32 million in exposure to carbon costs.

Using carbon footprints to exercise ownership rights.

Trucost has analysed assets in more than 800 equity portfolios, working with pension funds and portfolio managers. Investors use carbon footprints to understand companies' impacts relevant to their holdings. Carbon footprint analysis can identify how stock holdings and sector allocations contribute to a portfolio's carbon footprint. This analysis can inform engagement programmes which keep investment opportunities open.

Fund managers can use carbon footprints to identify the largest contributors to carbon risk both at an individual stock level and at a sector level. Engagement principles could include a threshold on the carbon intensity of companies in order to select high emitters for engagement. The threshold could be set in line with regulatory controls on greenhouse gases, or relative to the average carbon intensity of companies in each sector in the benchmark index.

¹⁹ Carbon price as at the date that company data was sourced.

Where no data is disclosed on greenhouse gas emissions, companies in high risk sectors could be targeted for engagement. In the absence of data, estimates could be used to identify potential risks. Engagement programmes can also use carbon data to encourage high-risk companies to achieve carbon reduction targets, and as a measurable tool to monitor their performance against targets. This information can be used to evaluate the outcomes of engagement programmes on climate change, as well as to track changes in portfolio carbon risks (see Case Study: Engaging on carbon risk).

CASE STUDY: ENGAGING ON CARBON RISK

Hermes Trucost has partnered with Hermes and the Carbon Trust, as part of a UN PRI initiative, to engage poorly performing companies to achieve quantifiable reductions in their carbon emissions. The programme sets carbon reduction targets for companies selected for engagement based on the risk that their emissions pose to investors and the likelihood that they would be able to achieve significant reductions.

The project's target was to achieve a carbon reduction of 4.3 million tonnes over a three-year period by engaging UK publicly listed companies – a clear, measurable outcome from investor engagement. Hermes tracks the carbon footprints of companies to monitor the progress in reducing their greenhouse gas impacts and risk exposure.

Sharing information on companies.

The Ministry of Finance/Council on Ethics and Norges Bank could use a common data platform or database to share Environmental, Social and Governance (ESG) information on companies. This would help avoid duplicating research efforts, ensure information is updated continuously, and co-ordinate engagement, proxy voting, exclusion and divestment activities across holdings.

The platform could include a system to rate companies on risk. Set timeframes for individual companies targeted by engagement could be established so that those that fail to respond or escalate to higher risk levels can be recommended for exclusion.

The platform could include data such as the carbon footprints of companies. Carbon footprint data could also be disclosed alongside holdings data in the Annual Reports.²⁰

c. Proxy voting

However, the limited size and time of engagement teams constrains the scope of deep engagement activities across a portfolio. Fund managers should ensure consistency between the Fund's position on climate change, active ownership principles and policies, and proxy voting activities. NBIM Proxy voting guidelines could be updated to avoid potential conflicts. For instance, on social and environmental issues, the guidelines state:

"In order to avoid unduly burdening any company with reporting requirements, NBIM's policy is to vote against shareholder proposals that demand disclosure or reporting additional to

²⁰ http://www.norges-bank.no/Upload/NBIM/Reports/Holdings/2007%20EQ_SPU_Europe_Americas.pdf

what is demanded by local law and regulation, unless it appears there is a legitimate issue and the company has not adequately addressed shareholders' concerns."

However, NBIM will generally support shareholder "proposals that request the company to report on their release of climate change relevant gases and mitigation strategies connected to these when the current public disclosure is not considered sufficient and such disclosure will benefit shareholders."

The guidelines are conservative with respect to climate change and business strategy: "NBIM will review and analyse such proposals on a case-by-case basis. NBIM will only consider supporting proposals that request the company to enhance or further develop already existing business strategies, where these are deemed to benefit shareholders."

This could be interpreted as only supporting proposals to continue with business as usual. However, where companies in high-risk sectors such as Utilities plan further investment in coal-fired plants, for instance, this could leave the bank exposed to significant carbon risks. The guidelines could be modified to support the shift in business models that will be required during the transition towards a low-carbon economy, and the investment opportunities this represents.

The guidelines should clarify NBIM's position on climate change to ensure consistency in active management activities across the Fund. The proxy voting guidelines could recommend that the fund generally vote for shareholder resolutions that call for companies to take actions that adhere to the UN Global Compact and other climate change principles established by the Fund.

Fund managers could commit to voting for proposals on climate disclosure and recommend reporting in line with the Greenhouse Gas Protocol, an international GHG corporate accounting and reporting standard developed by the World Business Council for Sustainable Development and the World Resources Institute. In fact, this is increasingly the view of governments. For instance, guidelines for companies to comply with mandatory greenhouse gas reporting requirements introduced in Australia in July 2008 are based on the Greenhouse Gas Protocol.

Investment managers need to be able to devote resources to follow up on resolutions with a company. Further specific guidance on climate change criteria in proxy voting guidelines is provided in Model Proxy Voting Guidelines by the Shareholder Association for Research and Education, 2008 (see Appendix 2).

In the US, a record 54 global warming shareholder resolutions were filed with US companies in 2008. An analysis by CERES of the voting records of 1,285 funds of 62 mutual funds from 2004-2007 showed that the industry is starting to recognise the financial risks and opportunities of climate change.²¹

However, support for climate resolutions is often outweighed by opposition or abstention. The CERES report found that two out of three fund votes were against climate change resolutions.

²¹ Mutual Funds and Climate Change: Opposition to Climate Change Resolutions Begins to Thaw, CERES, April 2008

It also found that many mutual funds are acting inconsistently on climate change, offering new climate-related funds and research products while opposing climate-related resolutions.

Trucost's analysis of NBIM's voting activities indicate that although the bank voted in favour of several shareholder resolutions on global warming during 2007, it also voted against such proposals regarding companies including Chevron Corporation, Consol Energy, El Du Pont de Nemours & Co, ExxonMobil, Ford Motor Company, General Electric Company, Occidental Petroleum Corp and Southern Company.²²

²² http://www.nbim.no/Templates/Article_41132.aspx; or http://www.nbim.no/upload/NBIM/CG/America_2007.pdf

Section B

1. Managing climate risks from regulatory GHG controls

Investment strategies to address carbon risk

Climate risks have been compared to the sub-prime lending crisis – that investors are failing to take account of underlying risks to assets.²³

“The classification of carbon as an externality results in poor capital allocation, such as the financing provided for new coal-fired power stations. A carbon tax and a cap and trade system are complementary ways to address this distortion. For an efficient carbon tax, we need to shift the burden of taxation away from employment-based taxes. Sweden, Norway, and the Canadian provinces of Quebec and British Columbia have begun this shift, with positive results.

“The longer we delay the internalisation of this obviously material cost, the greater risk the economy faces from a growing bubble of sub-prime carbon investments. Such investments ignore the reality of the climate crisis and its consequences for business.” Future performance relies on sustainability, Al Gore and David Blood, *Financial Times*, 17 April 2008

While active share ownership can be used to address climate change issues affecting long-term profitability, the effectiveness of engagement and voting activities across portfolios is limited. The size and time of engagement teams constrains the scope of deep engagement activities across holdings. Voting trustees tend to let asset managers and proxy voting agencies decide whether to vote and what to vote, and if only a few shareholders back the resolution, company management may not feel under sufficient pressure to change their behaviour. Furthermore, varying shareholder ownership rights across different jurisdictions could obstruct voting activities.

The Norwegian Government Pension Fund – Global could deploy a variety of investment strategies currently available to manage exposure to carbon risks portfolio-wide. These include best-in-class stock selection, positive screening, negative screening and carbon optimisation.

Investment banks and fund managers are using carbon footprint data to develop carbon investment products aimed at investors across a range of risk/reward characteristics.

Extra-financial best-in-class: Fund managers who apply a best-in-class or best-of-sector overlay select companies within index sectors based on their performance against environmental, social or governance criteria. Measuring carbon impacts in quantitative and financial terms enables carbon emissions to be integrated into investment decision-making. Using carbon data on corporate emissions, companies could be selected that emit less per NOK million in revenue than the average for sector peers in the benchmark index. Companies with carbon footprints equivalent to or better than sector averages in the portfolio could be

²³ Sub-prime and carbon: an eerie similarity, Responsible Investor, March 7th 2008

included in an investment universe from which stock with favourable investment characteristics could be selected. A best-in-class portfolio would be constructed of relatively carbon-efficient stocks, therefore reducing exposure to carbon costs.

This approach can reduce investment diversification but maintain sector balance, particularly if the universe is large. However, altering diversification of holdings could increase the risk of volatility in returns. It could therefore be limited to a proportion of assets, with carbon and financial results closely monitored to track changes in performance. Best-in-class portfolios essentially screen out companies with companies that are carbon-intensive relative to sector peers (see Negative screening below).

CASE STUDIES: BEST IN CLASS INVESTMENT PRODUCTS

Merrill Lynch Carbon Leaders Europe Index The Merrill Lynch index launched in 2007 offers exposure to carbon efficient footprint stocks with favourable valuation characteristics. It uses Trucost data and is constructed on a sector neutral basis in order to take into account the different sector characteristics of carbon footprints. Best in class footprint companies that are covered by Merrill Lynch and have a low trailing PE are include in the portfolio. The index offers investors the opportunity to lower their carbon footprint without taking size or sector bias versus the benchmark, the DJ Stoxx 600.

GLG Environment Fund GLG Partners launched a long-only fund filtering the greenest companies from its \$1.5bn European Equity Strategy in 2007. The fund uses Trucost data to find the companies in each sector with lighter environmental footprints. The fund aims to invest in those companies that have an environmental impact which is 31% lower than the sector average. In a comprehensive back test, GLG found that incorporating the environment into investment decision-making added 1.19% to the annualised returns of the existing European Equity Strategy.

Positive screening: Selecting companies against environmental, social or governance (ESG) criteria to include those that deliver environmental or social benefits. The array of environmental/climate change equity and hedge funds currently being developed largely focus on environmental technology companies.²⁴ Where climate change is included among environmental criteria, stock selection may focus on clean technologies or renewable energy developers.

Screening reduces the diversification of stocks and increases the risk to portfolio returns relative to the underlying index. Only a limited amount of assets in Sovereign Wealth Funds can therefore be allocated to positively screened portfolios as part of a strategy to seek financial outperformance.

Negative screening: Portfolios could establish criteria for climate-related negative exclusion. For example, data on carbon performance could be used to exclude companies with carbon-intensity above a certain threshold within high risk sectors to eliminate the greatest carbon risks. The threshold could be based on the average carbon intensity sector peers in the benchmark index. This would help to reduce exposure to carbon risks, particularly in regions

²⁴ A Guide to Climate Change Investment, Holden & Partners

covered by emissions trading schemes and energy/carbon performance standards. Norms-based negative screening limits exclusions to companies which do not adhere to international norms set by conventions and treaties on issues including the environment.

However, given the importance of diversification to protect shareholder value, the strategy limits investment choices and can alter sector and geographic allocations. This could lead to unbalanced portfolios with an increased risk of volatility in returns if used on a portfolio-wide basis.

Carbon optimisation: A quantitative approach to understanding corporate greenhouse gas emissions and carbon costs creates opportunities to manage carbon liabilities portfolio-wide. Portfolio attribution analysis can identify how their sector allocations and stock selections contribute to carbon risk in investments through a more thorough, integrated portfolio analysis. Mainstream investment analysis tools such as those offered by Style Research now offer this type of functionality.

Asset managers can incorporate carbon emissions into investment decisions and reduce the carbon footprints of investments through carbon optimisation, using carbon intensity criteria to apply a carbon tilt. A carbon overlay enables portfolios to rebalance company weightings based on carbon performance.

Companies' carbon performance can be assessed against a carbon intensity threshold in each sector to inform decisions on the weighting of holdings relative to the underlying benchmark. The carbon optimised index or portfolio overweights companies that are carbon efficient relative to sector averages in the underlying index, and underweights carbon-intensive companies. This approach can be applied to portfolios that contain diverse stocks within sector allocations, and employed with any passive or active investment strategy.

Rebalancing stocks within each sector typically reduces the fund's carbon footprint by circa 25%. Whereas climate change funds focusing on negative screening or solution providers such as renewable energy reduce the stock universe, a strategy to "carbon optimise" portfolios maintains diversification of stocks while addressing carbon liabilities across all sectors of the economy. Key features of carbon optimisation include:

- Carbon overlay to existing investment strategy.
- Carbon data can be integrated with financial analysis for integrated stock picking.
- Tilts toward carbon-efficient stocks within a sector.
- Market capitalisation and sector neutrality maintained to avoid size and sector bias.
- Full stock universe and benchmark returns without sacrificing financial returns.

Integrating climate change risk into traditional financial analysis treats carbon as a value-driver using a normative judgement informed by a company's carbon performance relative to the benchmark. The quantitative approach directly takes account of greenhouse gas emissions performance, addresses risk exposure and fits in with traditional financial metrics. Portfolios can be carbon optimised without sacrificing financial returns, and evidence shows small but emerging financial outperformance in portfolios employing this strategy with European equities, where an emission trading schemes applies a cost to carbon.

Leading asset managers have created carbon optimised portfolios using Trucost data. Carbon optimised funds include the UBS Europe Carbon Optimised Index (see Case Study below).

CASE STUDY: UBS Europe Carbon Optimized Index

UBS has used analysis from Trucost to create the UBS Europe Carbon Optimized Index, based on DJ Stoxx 600. The UBS Index matches the sector weightings of the benchmark but overweights the carbon-efficient stocks and underweights those that are carbon inefficient within each sector. Investors are therefore able to receive index returns on a lower carbon footprint portfolio.

UBS put a cap on the level of over and underweighting to limit tracking error, and did not exclude any companies. The tracking error is approximately 0.46%. Back-testing over a 3-year period has shown the UBS index would have produced positive relative returns since December 2006 versus the DJ STOXX 600, with approximately 37% lower carbon emissions.

Matrix investing: Many asset managers and owners are combining climate protection investment strategies. Assets could be allocated to invest in climate "solutions". Selecting companies on the basis of what they do from an environmental perspective, combined with a best-in-class approach to how they operate. Carbon-efficient portfolios will be well-positioned to benefit from a shift towards a low-carbon economy.

SECTION C

1. Best practice in emerging markets/developing countries

Greenhouse gas constraints

Many emerging market countries that have not committed to carbon reduction targets under the UN Kyoto Protocol are implementing policies to reduce greenhouse gas emissions. Central and Eastern European emerging markets including the Czech Republic, Poland and Slovakia are covered by GHG limits under the EU ETS. China and India have established climate change programmes which include energy intensity targets, and China aims to transform its development pattern and the structures of industries to induce energy efficiency. Singapore has introduced a strategy to improve carbon intensity by 25% on 1990 levels by 2012. The Government plans to set efficiency standards for energy-intensive industrial equipment. South Korea and Taiwan plan to introduce mandatory emission trading schemes. South Africa plans to stabilise its greenhouse gas emissions by 2020-2025 and is considering market mechanisms including carbon taxes to achieve the goal. Brazil has called on developing countries to set national targets for greenhouse gas emissions, a major barrier in the UN climate negotiations.

Companies that operate in countries which do not agree to adequate carbon constraints under an international agreement on climate change from 2013 may face barriers in future as Annex 1 countries under the UN Kyoto Protocol seek to prevent carbon leakage – where companies relocate to countries in order to continue to emit carbon emissions without paying for external damage costs. Carbon and energy-intensive production in countries which do not introduce emission constraints could be penalised through government policies to tackle free-riders and shifts in supply chains. Companies may need to purchase carbon credits or pay tariffs in order to export energy-intensive goods. For instance, the French Government has proposed carbon taxes for products entering the EU from regions with weak climate policies.

Responsible investment

The investment approach to environmental, governance and social issues tends to be reactive in response to more pressing and immediate challenges than long-term climate change impacts. Capacity to use active ownership tools such as proxy voting is limited, however several investors and financial institutions, particularly UN PRI signatories, are seeking to increase their influence on emerging market companies through collaborative engagement initiatives.

Collaboration and capacity building on ESG research and responsible investment

Collaborative engagement tends to focus on encouraging disclosure on ESG issues to provide investors with information on company performance in areas such as greenhouse gas emissions; and strengthening corporate governance to develop management accountability for financial performance as well as ESG issues. Examples include:

Emerging Markets Disclosure (EMD) Initiative: There is a lack of standardised disclosure on sustainability issues in emerging markets, according of a benchmarking report by the Sustainable Investment Research Analyst Network (SIRAN) with support by Calvert.²⁵

As part of the third phase of the Emerging Markets Disclosure (EMD) Initiative, the Calvert Group, which manages more than \$15 billion in assets, and Boston Common Asset Management are co-operating with the International Working Group of the Social Investment Forum to encourage emerging market companies to improve sustainability disclosure. The initiative mobilises lead investment firms for each emerging market to work with lead local country partner organisations. Calvert invites UN PRI signatories to participate in the regional engagement groups. The emerging markets considered are Brazil, China, India, Russia, South Africa, South Korea, and Taiwan.

Seoul Declaration: A group of UN PRI signatories are collaborating to encourage companies in areas including emerging markets to participate in the UN Global Compact. The aim is to address ESG challenges including climate change and resource depletion. In a statement in June 2008, financial institutions, institutional investors, and business leaders called on investors, financiers and companies to take steps including:

1. Align policies and measures with the goals of the UN PRI, UNEP Finance Initiative and UN Global Compact.
2. Consider environmental, social and governance issues in financing, business and investment, as long-term fiduciaries and custodians of capital.
3. Emphasise improving governance structures and increasing the transparency of business.
4. Engage constructively with policy makers on key environmental, social and governance issues so they can put in place the required long-term incentives and certainty to stimulate investment and changes in business processes.

The initiative also identifies emerging opportunities, including clean technology and renewable energy, the development of more efficient products and processes, and rapidly growing markets for sustainable goods and services.

Mergence Africa Investments in South Africa: Mergence is leading an investor initiative to engage on key environmental indicators with the top 100 companies listed on the Johannesburg Securities Exchange (JSE). Companies will be asked to report regularly and consistently on indicators including absolute amounts of greenhouse gas emissions in their Annual Financial Statements in line with the Global Reporting Initiative (GRI).

The aim is to enable investors to effectively assess environmental improvements by companies, as well as to compare company performance, so that investors can identify their exposure to financial and non-financial environmental risks.

Pension funds target corporate governance in emerging markets

Asian pension funds including **Korea's National Pension Corporation** (NPC Korea) and the **National Social Security Fund** in China are beginning to develop responsible investment practices and to encourage companies to improve corporate governance.²⁶

²⁵ http://www.calvertgroup.com/news_newsArticle.html?article=12908

South Africa's largest pension fund, the **Government Employees Pension Fund (GEPF)**, is working to incorporate ESG issues into decision-making and is in discussions with the Johannesburg Stock Exchange to develop a tool to facilitate this.

Thailand's Government Pension Fund (GPF Thailand) has developed a corporate governance rating system for Thai companies based on the OECD Principles for Corporate Governance.

The **Brazilian pension fund PREVI** aims to integrate environmental, social and governance (ESG) issues into its investment strategy.

Financial institutions invest in renewable energy and ESG research

The Asian Development Bank promotes clean energy initiatives. The bank's technical assistance program on climate change includes capacity building on climate change issues and on carbon credits under the UN Kyoto Protocol Clean Development Mechanism (CDM). Initiatives promote renewable energy and energy efficiency technologies.²⁷

The International Finance Corporation supports investment in sustainable energy that contribute to reducing rising greenhouse gas in developing countries, particularly renewable energy technologies such as run-of-the-river and conventional hydro, geothermal, biomass, wind, and solar. This is done mainly done through the Global Environment Facility (GEF), the financial mechanism for the climate convention (<http://www.gefweb.org>). IFC is expanding efforts to accelerate uptake of energy efficiency (EE) projects.

The IFC is currently implementing a CO₂ tracking program and working with the World Bank Group to develop procedures to value ecosystems with cost/benefit analysis.²⁸

In 2007, the IFC commissioned Trucost to conduct the first carbon analysis of Asian equity funds tracking the MSCI Asia ex-Japan index. *Carbon Counts Asia 2007: Carbon Footprints of Asian Investment Funds* includes a study of the feasibility of creating a carbon-optimized version of the MSCI Asia ex-Japan index.²⁹ The report, launched at the UN climate talks in Bali in December 2007, provides the first comprehensive review of greenhouse gas emissions by Asian companies by analysing the carbon intensity of the MSCI Asia ex-Japan index and 90 individual investment funds in Asia. The analysis found that Asian listed companies are more carbon intensive than their peers in other regions of the world. Investors in Asian Equity funds are therefore more exposed to carbon risks.

The IFC has also hired Mercer to examine the extent to which ESG factors are considered in emerging market investments. The one-year project includes a global survey of equity managers on their approaches to ESG factors in emerging markets; a review of how mainstream equity managers in Brazil, China, India and South Korea are considering ESG risks or opportunities; and an assessment of "sustainable investment" fund products in emerging markets.³⁰

²⁶ Asia's state pension funds: on route to better governance, Responsible Investor, 28 May 2008

²⁷ <http://www.adb.org/REACH/default.asp>

²⁸ <http://siteresources.worldbank.org/EXTENVIRONMENT/Resources/chap4.pdf>

²⁹ <http://www.trucost.com/publishedresearch.html>

³⁰ <http://www.pionline.com/apps/pbcs.dll/article?AID=/20071129/DAILY/71129003/1034/PIDAILYMM>

2. Climate-related investment

Rapid growth in investments in renewable energy and clean technology signal the beginning of a structural shift towards a low-carbon economy through investment decisions taken over the next decade.

Asset managers have developed thematic investment products such as climate change funds comprised of companies with climate-related products or services. Some funds invest in technology solution providers or renewable energy to seek outperformance. For example, Calvert offers a fund that invests in companies that provide climate change “solutions” such as renewable energy and energy efficiency technologies. Henderson Global Investors Industries of the Future fund only invests in global companies providing solutions to sustainability challenges. Themes include cleaner energy, efficiency; environmental services; sustainable transport; and water management. Henderson publishes annual carbon audits of the Fund, using Trucost data and analysis.

The Norwegian Government Pension Fund – Global could allocate a portion of assets to “clean tech” and renewable energy to contribute to the Fund’s strategy to seek excess returns. However, reducing the investment universe increases risk. It is recommended that thematic investment should therefore only make up a portion of asset allocations/equity portfolios in the diversified Fund. For example, these investments could target regions including emerging markets, where there are significant opportunities to develop low-carbon energy infrastructure. This could contribute to energy security and greater stability of power supplies in countries such as South Africa, potentially enhancing returns in a range of industries.

Including climate criteria in international investments is in line with government priorities to address climate change. Investing in climate protection is in keeping with Norwegian climate policies and national budget, which in May 2008 strengthened investments in measures to address climate change, including investment in forest conservation in developing countries and funding for research into renewable energy and carbon technology.

However, demand-driven renewable energy and clean technology development is crucial to create a sustainable shift towards a low-carbon economy. Additional tools such as carbon optimisation and best-in-class strategies can be used to help reduce the cost of capital for carbon-efficient companies in portfolios and provide an incentive to drive uptake of low-carbon technologies and energy supplies across all assets and sectors.

Positioning the Norwegian Government Pension Fund for a low-carbon economy

The Ethical Guidelines of the Norwegian Government Pension Fund – Global have laid the foundations to lead on investing to manage climate change risks and opportunities. During the four-year period from 2007 to 2010, NBIM aims to “be able to point to increased awareness and concrete changes at portfolio companies – and in the markets – in all of our priority areas.” It will “endeavour to report as openly as possible on the principles and priorities underlying our ownership processes, the types of resources that have been used, and the results that have been achieved.”

With clearer active ownership policies on climate change issues, the Fund's transparency on engagement and voting activities will help ensure that asset managers address relevant climate-related risks.

Existing investment strategies can be modified to take carbon considerations into account without sacrificing returns. A combination of active and passive management can be used to protect the underlying value of assets and potentially add value. Asset managers can use tools such as carbon optimisation to achieve systematic carbon reductions while maintaining portfolio diversification, sector balance, and risk-reward ratios.

To help achieve best practice in responsible investment in managing climate change, fund managers could:

- Assess the carbon profiles of companies within their portfolios and identify low-carbon, resource-efficient sectors and holdings which are likely to be better placed under tightening regulatory regimes. Use carbon footprints to identify holdings with the greatest financial risk from carbon costs.
- Develop a strategy to drive uptake of low-carbon "climate solutions" where there is potential for this to enhance returns through new opportunities, greater resource efficiency and reduced exposure to corporate carbon costs.
- Incorporate investment-relevant climate change criteria into engagement and proxy voting activities.
- Establish climate change criteria for specific asset classes, for example by applying a carbon tilt or best-in-class approach to holdings in the emissions intensive, high risk Utilities, Chemicals and Basic Resources sectors.
- Employ a combination of climate protection investment strategies to manage risks and opportunities.
- Portfolios in the Norwegian Government Pension Fund could be carbon optimised to factor carbon costs into investment decisions while maintaining diversification of the stock universe, rewarding carbon efficiency across the economy, and preserving financial efficiency relative to the benchmark index. Fund managers could apply a cap on reweighting holdings to limit the tracking error to 1.5%, and ensure ownership stakes are limited to 10% of the voting equities of listed companies, in line with the Ministry of Finance risk strategy for the Fund.
- Monitor and report on carbon and financial performance during a specified period to help identify the most effective investment approaches to address climate change issues while preserving the value of assets.

Fund managers could be required to apply a range of best practice approaches to managing climate change to a portion of assets or limited number of portfolios during a four-year period. This would help develop expertise and identify potential effects on carbon and financial performance with moderate risk. The Fund could therefore develop the appropriate strategies and tools to manage financially material carbon factors in keeping with fiduciary duties to safeguard the financial interests of the Fund. These could be extended portfolio-wide in future to position Fund assets for global carbon costs in the long-term.

SECTION D

1. How are pension funds managing climate risks to portfolio returns?

Pension funds and other institutional investors are beginning to assess and manage risks to the value of investments from environmental impacts such as greenhouse gas emissions and the government regulations designed to mitigate such factors.

Several pension funds encourage asset managers and research providers to develop a knowledge-base on climate change and to identify the companies and sectors most likely to be exposed to risks and opportunities in different markets and asset classes.

Pension funds such as the Universities Superannuation Scheme and PGGM are collaborating to develop understanding and strategies to address climate change through initiatives such as the Institutional Investors Group on Climate Change (IIGCC) and Enhanced Analytics Initiative, a network of investors supporting the development of ESG information in investment analyses.

Demand for mainstream responsible investment approaches is being driven by pension funds including Fonds de Réserve pour les Retraites and the Environment Agency Pension Fund, as well as retail consumers. Some leading approaches to integrating climate change and other environmental issues into investment strategies are outlined below, including some examples of Trucost's own work with pension funds.

How pension funds use carbon footprints

Measure the overall impact of all equity investments: Footprints provide a tangible tool to measure and monitor carbon performance of equity holdings.

Compare asset managers and strategies: Compare different managers and mandates on carbon performance and exposure to carbon risk. For example, the Environment Agency Pension Fund has worked with Trucost to develop an Environmental Overlay Strategy which requires investment managers to consider and control financially material environmental risks and opportunities including climate change across each investment portfolio. Carbon footprints help monitor external fund manager performance against climate change criteria (see page 35).

Audit risks: Assess the potential carbon risk to the value of investments. Footprints identify which stock selections and sector allocations contribute most to environmental risk.

Communicate: Demonstrate commitment to monitoring environmental impacts and inform members if investments made on their behalf are low impact. Trustees use footprints to have focused discussions with managers about how environmental performance and risk relates to their investments.

Measure and manage investment managers: A footprint report identifies the largest contributors to carbon risk both at an individual stock level and as a result of sector allocation decisions. Footprints enable fund managers to manage potential risk areas in a portfolio in order to prepare for future costs of climate legislation.

UK Environment Agency Active Pension Fund

The Environment Agency Pension Fund (EAPF) is the 10th largest member of the Local Government Pension Scheme (LGPS) and one of the top 50 pension funds in the UK. The fund has received the LGC Corporate Governance Award, the IPE SRI Fund of the Year Award, and the Global Money Management Public Pension Fund of the Year Award.

The EAPF takes an environmentally responsible investment approach which recognises that material issues such as climate change can adversely affect the fund's financial risks and investment returns. The Agency therefore states that climate change should be taken into account in the investment strategy and process.

The majority of the Fund's investments are made in stocks listed on recognised Stock Exchanges. However, the Environment Agency has adopted an Environmental Overlay Strategy (EOS) which requires investment managers to consider and control financially material environmental risks and opportunities including climate change across the investment portfolio.

The Agency assesses the fund managers' ability to comply with EOS criteria across eight investment management agreements (IMAs). Criteria include quality, integration, and impact of environmental research; information used in investment management; value for money; and resources available to external managers.

Specialist research providers help fund managers implement the fund's environmental overlay strategy. Fund managers are encouraged to use environmental research into risk and performance ratings "to identify and avoid financial risks attributable to environmental issues, such as climate change, that could impact negatively on investment returns."

Extract from Environment Agency Annual Report 2006/07:

"We recognise that when the strategy is applied to investments in equities, bonds, gilts, property and private equity, this will involve considering different approaches, constraints, risks, opportunities and potential benefits. Our main influence will be through our strategic asset allocation, manager structure, manager selection, performance benchmarks, monitoring, and reporting – and not by getting involved in the day-to-day investment decisions, which is the role of our asset managers."

The EAPF favours a "best in class" basis for stock selection, and encourages the use of engagement rather than negative screening. The Agency asked investment managers encourage companies to comply with the Government's environmental reporting guidelines for business.³¹ Fund managers must report quarterly on environmental considerations or analysis, as well as any engagement and voting on environmental issues.

Each equity manager must help the Environment Agency assess the environmental footprint of the fund, including its greenhouse gas emissions. Trucost was awarded the contract to provide environmental footprint assessments and reports for the portfolios on the basis of technical expertise, value for money and understanding of the Agency's reporting needs. Trucost provides environmental footprints to enables pension fund trustees and their fund managers to understand environmental impacts in quantitative and financial terms.

³¹ <http://www.defra.gov.uk/environment/business/envrp/pdf/envkpi-guidelines.pdf>

The following is taken from the Agency's Annual Report 2006/07:

"We have undertaken environmental footprint analysis using Trucost's methodology for each of our active equity funds against their respective benchmarks. By measuring our footprint we aim to provide a fresh perspective on risk, stock selection and sector exposures. The footprint methodology looks at companies' environmental impacts, for example the amount of raw materials, water and energy used and the waste and carbon emitted. Trucost evaluates over 700 factors in assessing a company's environmental impact.

The footprint for each equity manager, in relation to the EAPF, is compiled by allocating a proportion of the environmental impact of each company relative to the amount of stock that is held. Similarly, we have evaluated the environmental impact of our combined equity holdings compared to the benchmark, the MSCI World Developed Countries Index. In 2007, the Fund's environmental footprint for combined active equities is 14.0% better than the benchmark. This represents a further improvement from the environmental footprint of 4.6% in 2006. This is the first time that a UK pension fund has publicly measured and reported the impact of its global equity holdings in this way."

The Agency has signed the UN Principles of Responsible Investment (UNPRI) and collaborates with organisations including the UK Social Investment Forum (UKSIF), the Carbon Disclosure Project (CDP), the Local Authority Pension Fund Forum (LAPFF) campaign on environmental reporting, and the IIGCC.

London Pensions Fund Authority

One of the first local authority pension schemes to commission a carbon assessment of its equity portfolios was the the London Pensions Fund Authority (LPFA), one of the largest Local Government Pension Schemes in England with over 73,000 members and assets of over £3.7 billion.

LPFA Chief Executive Mike Taylor said: "Trucost's carbon footprint analysis has given us the first solid metrics on climate change issues in our fund. It has enabled us to have informed and in-depth discussions with fund managers on how they have taken environmental issues on board in our portfolios."

The LPFA Board recognises that good practice on "environmental, social and corporate governance issues can have a favourable effect on the financial performance of a company and improve investment returns to the shareholder in the long term".

LPFA strengthened its commitment to long term responsible investing in 2007 by adopting a new strategic objective: "To develop our investment options within the context of an ethical and sustainable investment strategy."

LPFA's Statement of Investment Principles now includes a policy on social, environmental and ethical (SEE) issues. LPFA's officers, investment advisers, consultants and other agents are expected to adopt and develop practices and procedures "to ensure that significant or relevant SEE considerations are duly taken into account in the management of its assets."

The policy has led to changes in the portfolio on environmental grounds.

As a long term responsible investor, and to protect and enhance the value of its investments, the LPFA promotes good environmental, social and corporate governance (ESG) practice standards in all its investee companies. LPFA uses its shareholder voting powers and engagement on ESG factors to influence the companies in which it invests.

LPFA does not have the resources to be fully active or to engage widely in relation to its own investment portfolios, and therefore instructs investment managers to progressively develop and implement engagement policies on its behalf. The LPFA Board's voting policy approves the voting of all UK and global equities by all its global equity managers.

The LPFA supports and participates in collaborative initiatives to develop engagement with companies on ESG issues. The LPFA participates in projects such as the UN Principles for Responsible Investing (UNPRI) and networks and specialist knowledge sharing opportunities such as the IIGCC, the Marathon Club, the Enhanced Analytics Initiative, the National Association of Pension Funds, and the Local Authority Pension Fund Forum.

Fonds de réserve pour les retraites (FRR)

The French pension reserve fund is a publicly owned, state-funded agency. As a public investor with a broad-based public service mission, the FRR strives to ensure that its investment policy "is consistent with certain collective values that contribute to balanced economic, social and environmental development".

The FRR currently executes its responsible investment strategy through an active proxy voting policy and social, environmental and governance criteria in its management of European equity portfolios.

Mandates are partly awarded on the ability of managers to fulfill this fiduciary duty on a large scale and in compliance with proxy voting guidelines which outline principles on environmental issues in line with the UN Global Compact. This supports a precautionary approach to environmental challenges by business, environmental responsibility and the development and diffusion of environmentally-friendly technologies.

ESG criteria are also incorporated into the portfolio management process and investment decisions. Managers of European large-cap equity mandates were asked to integrate ESG issues into research and analysis on the basis of the UN Global Compact principles and try to include these research findings into stock-picking. The Fund is scrutinising environmental, social and governance (ESG) standards in its portfolio of large and mid cap companies in developed markets before doing so in emerging markets in the future.

In 2006, the FRR signed the UN PRI and begun to assess its entire portfolio on the basis of extra-financial criteria. Trucost analyses the environmental footprints of approximately €17 billion worth of global equity holdings to measure associated greenhouse gas emissions and wider impacts such as water use and waste production. The research enables FRR to measure the environmental impacts of investments and to identify the fund's potential exposure to environmental risk, as well as opportunities to reduce risk.

Trucost calculated the overall environmental footprint of the FRR's global equities, taking into account the fund's holdings, and compared this to the footprint of the benchmark. Equities

were also segmented and examined according to investment style. The environmental footprints of these 'Lots' were calculated and compared to their relevant benchmarks.

As well as calculating the overall footprint, the analysis provides a detailed breakdown of stock and sector level contributions to the environmental footprint. Analysis indicates which companies in the portfolio contribute the most to the fund's footprint, and which stock picks in the fund are better or worse than the benchmark from an environmental perspective.

A further break down by geography indicates whether particular geographies contribute more proportionally to the overall environmental footprint of global equities. The proportion of the environmental impacts made up of greenhouse gases versus water, waste and other emissions and resource use is also examined. The fund's principle environmental risks and benefits were identified and presented to the FRR Board.

In April 2008, the Board adopted a five-year responsible investment strategy that includes a review to assess non-euro equities, bonds, property, infrastructure and private equity against ESG criteria, focusing on climate change. The intention is to incorporate all or some of these criteria into the financial management of all asset classes. The Board has also created a responsible investment committee to manage ESG risks.

VicSuper

VicSuper is one of Australia's largest public offer superannuation funds and a signatory to the UN PRI. As a near permanent investor in major Australian companies, VicSuper aims to manage its exposure to long-term sustainability risks of companies and has assessed the environmental footprint of its Australian and international listed equity investments.

Trucost analysed VicSuper's holdings over an annual period, assessing the environmental intensity of VicSuper's investment portfolio per dollar invested compared to its benchmark.

Commitments include:

- Analysing the environmental footprint of equity portfolios.
- Investigating the feasibility of expanding the measurement of the environmental footprint of investments to incorporate additional asset classes.
- Investigating further opportunities for sustainability investment in equities.
- Working towards a full understanding of the sustainability profile of the companies in which VicSuper invests.
- Investigating sustainability screening of fixed interest investments.
- Developing a sustainability governance policy for investments.

VicSuper states that: "The interdependency between climate change and superannuation may not be immediately obvious, but both are long-term issues that will determine our future quality of life. Both require foresight and long-term planning; and both call for action in the short term to influence the outcomes in the long term. The time for action is now."

VicSuper believes that the risk of companies exceeding regulatory limits on their greenhouse gases emissions, paying penalties and suffering loss in value "pose a threat to

superannuation investments because they impact on a company's long-term profitability and therefore its share price. This has a long-term impact on the return that superannuation fund members receive."

A climate change policy identifies the fund's approach to managing and mitigating its climate change impact, reducing risk, adapting to climate change, and identifying related opportunities. The policy intends to increase member and stakeholder value by reducing VicSuper's contribution to climate change, and by reducing climate change risk in relation to investments and operations.

VicSuper recognises that businesses "which are changing the way they do things to help prevent further climate change, and adapting their operations and products to take advantage of the new economic and environmental conditions, are well positioned within a climate change affected economy to generate profits over the long term and are the types of companies in which VicSuper seeks investment opportunities."

VicSuper has helped create a research and company engagement service provider dedicated to long-term shareholder value in major Australian companies. Investee companies are encouraged to quantify, manage and publicly report their greenhouse gas emissions.

ABP

Dutch pension fund ABP is examining the commercial opportunities and risks of climate change and reviewing its investments in energy.

ABP sees its ESG policy as part of its obligation to achieve the highest possible return for clients. As a long-term investor, it prioritises the long-term goals of companies in which it invests and believes that companies with strategies which, in addition to financial return, place a high value on ESG factors will perform better in the long term.

Investment analysis factors in economic growth, as well as information on ESG issues.

"These topics are not always covered in a company's financial statements, but they are particularly relevant for a long-term investor such as ABP... Our activities in the area of ESG do not represent a goal in and of themselves. ESG helps us to discharge primary responsibility by increasing return and lowering risks."

The ESG policy currently applies to domestic and global equities with a total value of approximately €22 billion.

"We believe that capital markets ultimately take account of environmental, social and corporate governance risks and that this is reflected in share prices. We are making progress in integrating ESG information into our processes. In addition, specialised ESG analysts advise the portfolio managers regularly on topics such as climate change.... In making decisions on investments, these topics carry a heavy weight, as they have consequences for companies' financial performance."

ABP is a signatory to the UN PRI and ABP Investments is a member of the IIGCC and promotes new high-quality research on ESG issues through initiatives such as the Enhanced Analytics Initiative.

ABP regularly reviews its ESG policy and, in its strategic investment plan for 2007-2009, sets out its intention to incorporate ESG factors in all investments, including real estate and bonds. It also plans to disclose all investments to improve transparency.

AP pension funds

An ethical and environmental policy is integral to the ownership policy of Sweden's AP pension funds, a signatory to the UN PRI. The fund manages pension capital on behalf of every person who is, or ever has been, employed in Sweden.

The criteria in the fund's ethical and environmental policy are based on conventions and agreements ratified by the Swedish government and parliament. The fund expects all companies in which it invests to comply with international treaties and conventions signed by the Swedish government, including the Kyoto Protocol on climate change. The requirement to adhere to these conventions applies regardless of whether a company has operations in countries whose governments have not ratified all of these conventions.

If a company in which Första AP-fonden has invested is associated with infringement of these conventions, the fund uses active corporate governance to encourage the company to change its behaviour. The fund only sells its holdings as a last resort.

Since 2007, SRI analysis and engagement with foreign companies in the portfolios of the four AP funds have been handled jointly through an Ethical Council. The Council monitors the companies' environmental and ethical compliance to identify infringements of international conventions, analyses incidents and engages with companies.

A total of around 3,500 companies are reviewed, which typically leads to in-depth assessment of some 20 companies. The Council has published its first annual report including the names of companies it is currently engaging with on behalf of the four AP funds.³²

CalPERS

The California Public Employees' Retirement System (CalPERS), the largest US public pension fund with assets of approximately \$240 billion, takes account of the potential effect of climate change on the long-term sustainability and share value of companies.

Policy guidelines for 2007 and 2008 are the first ever adopted by CalPERS to direct its representatives with respect to federal regulatory and legislative proposals. The guidelines endorse policies for "improved transparency and timely disclosure of environmental risks; the development of a clear, predictable national climate change policy and more energy efficient economy; and energy and transportation policies that nurture competitiveness and innovation leading to meaningful greenhouse gas reductions".

CalPERS has backed a California Senate Bill 1550 which would require climate change disclosure standards for public companies in the state, based on the Global Framework for Climate Risk Disclosure. The Framework, developed through the Climate Risk Disclosure Initiative, urges companies to disclose greenhouse gas emissions data in line with the

³² http://www.ap1.se/upload/reports/AP1_annualreport_2007.pdf

Greenhouse Gas Protocol³³, strategic analysis of climate risk and emissions management, and physical and regulatory risk assessments.

CalPERS, a signatory to the UN PRI, engages with sectors with high risk exposure to climate change, such as carmakers. Corporate governance guidelines used to vote proxies, engage companies and implement initiatives have been expanded to include environmental disclosure. A CalPERS statement said: "The environmental guidelines are aimed at getting companies to disclose and act upon climate risks like carbon emissions that, if unaddressed, could diminish investment returns... CalPERS will also work with the Investor Network on Climate Risk to survey public equities' investment managers regarding their ability to evaluate climate risks and opportunities of the companies in which they invest. Survey results might be used to help investors identify best practices that they could incorporate into their review process for current and prospective managers."

Prince Charles pension fund P8 climate action plan

Ten of the world's largest pension funds from Europe, Asia, the US and Australia, which manage over \$2 trillion, are developing an action plan on addressing climate change in October 2008.³⁴ The plan will include lobbying for a regulatory and financial environmental that supports investment in sustainable energy and clean technologies. Members in the P8 Group, alluding to the G8, are understood to include the Universities Superannuation Scheme, ABP, CalPERS and CalSTRS.³⁵ The

What are asset managers/owners doing in practice?

More integrated strategies are required to maintain diversification and risk-reward ratios across portfolios. Asset managers have begun to develop products and tools to address environmental issues including climate change risks and opportunities. A range of strategies are now available for equity investments. Forward-thinking fund managers are already positioning their portfolios to benefit from trends that increasingly put a price on carbon costs.

Portfolios which have relatively small carbon footprints are well placed to benefit from the competitive advantage set to be gained by carbon efficient companies under a framework of escalating carbon costs. Companies which reduce their direct exposure to carbon risks or indirect exposure through their suppliers stand to gain from changing stakeholder demands, a trend to green supply chains and avoidance or reduction of regulatory compliance costs.

Some of the leading approaches currently being applied across mainstream investment strategies and different asset classes are outlined below.

Insight Investment Insight recognises that climate change is the result of a market failure and advocates collaboration between companies and investors to actively address climate change and "identify and finance the most effective solutions".

³³ An international GHG corporate accounting and reporting standard developed by the World Business Council for Sustainable Development and the World Resources Institute

³⁴ <http://www.responsible-investor.com/home/article/p8/>

³⁵ <http://www.guardian.co.uk/money/2008/aug/03/investmentfunds.pensions>

³⁶ http://www.cpi.cam.ac.uk/programmes/energy_and_climate_change/p8_group.aspx

Insight Investment, a signatory to the UN PRI and member of the IIGCC, conducts extensive engagement activities to encourage public policymakers to allocate a monetary value to greenhouse gas emissions and to establish a long-term climate policy framework.

Insight Investment has developed a framework to assess investee companies on the efficacy of their management processes to identify, understand and manage risks related to greenhouse gas emissions.³⁷ It engages with companies to encourage strategic responses to managing climate change, emission reductions and improved reporting. Climate change is included in thematic research used to assess potential risks to equity and bond investments.

Insight has analysed the investment implications of government policy measures to reduce greenhouse gas emissions. It has also identified how companies and their investors are likely to be affected by the physical effects of climate change, in a report published in January 2008 – the result of a research project conducted together with Henderson Global Investors, RAILPEN Investments and the Universities Superannuation Scheme.³⁸

TIAA-CREF The \$435bn US pension, insurance and financial services company aims to cut energy waste in its \$70bn global property investment portfolio by 10% by 2010, reducing CO₂ emissions.

"TIAA-CREF is committed to lowering the carbon footprint of the buildings that comprise our commercial real estate portfolio," said Tom Garbutt, Managing Director and Head of TIAA-CREF Global Real Estate. "Our goal is to enhance our portfolio's long-term value, which we achieve, in part, through prudent property management. We believe the best management practices today are defined, in part, by energy efficiency."

Guidelines for environmental and social issues include a general policy to support "reasonable" shareholder resolutions seeking disclosure of greenhouse gas emissions and the impact of climate change on a company's business activities.

TIAA-CREF addresses climate change through its SRI program: social screening; shareholder advocacy and corporate engagement; and community and proactive social investing.³⁹

Banks agree Carbon Principles Citi, JPMorgan Chase, Morgan Stanley, Wells Fargo, Credit Suisse have agreed Carbon Principles as part of due diligence for investment in the utility sector.

They will encourage clients to invest in cost-effective energy demand reduction, including energy efficiency measures, taking the value of avoided CO₂ emissions into account. Clients will also be encouraged to invest in cost-effective renewable energy and distributed technologies. The financial, regulatory and environmental liability risks of investing in fossil fuel generation will be reflected in financing of fossil fuel generation.

³⁷ Taking the temperature; Assessing the performance of large UK and European companies in responding to climate change

³⁸ Managing the unavoidable; Understanding the investment implications of adapting to climate change

³⁹ http://www.tiaa-cref.org/about/press/about_us/releases/pdf/sri_brochure_2008.pdf

2. Further opportunities to manage climate change value-drivers in pension funds

Set carbon reduction targets for equity portfolios

Set a target to reduce the carbon dioxide emissions of global equity portfolios in line with the international targets to reduce greenhouse gas emissions beyond 2013. Due to the lack of company-level CO₂ data in 1990, the baseline could be set at 2010 emissions levels, with targets adjusted accordingly.

Portfolio carbon reduction strategies could be aligned with periodic carbon budgets, for example over four-year periods. This would enable achievable timeframes for reductions and provide a framework for regular, cost-effective monitoring of the fund's carbon footprint, and clear criteria to assess the climate-related performance of asset managers.

Alternatively, a target could be set for greenhouse gas reductions in equity portfolios in line with the EU target of a 20% cut on 1990 levels by 2020⁴⁰. Estimated economic benefits of the EU climate and energy package include around €50 billion a year in savings through reduced fuel imports.

The baseline could be set at 2008, with the target adjusted to take account of any GHG emission reductions in the EU-15 between 1990-2008⁴¹. The revised reduction target could therefore be set at around 17% by 2020.

The strategy to align portfolio mandates with government policies could help reduce risk exposure to relatively carbon-intensive companies which face rising carbon costs, and address carbon leakage from companies in the portfolio. Selecting stocks which are able to reduce their carbon footprints effectively compared with their peers could position the fund well as these companies gain financial advantage under stronger energy performance standards and other carbon constraints.

Establish principles for investment in exposed sectors:

Sector-specific principles could support the pension fund's climate change strategy. For example, criteria for carbon disclosure, energy or carbon efficiency performance standards and carbon reduction strategies could be included in processes for risk analysis, investment-decision making and engagement with utility, coal, oil & gas, metals and transport companies.

Other asset classes such as hedge funds, bonds and property are still in the early stages of integrating environmental issues into decision-making, but are developing tools to do so as demand for innovation grows from investors.

Property Assess the portfolio's direct property investments for climate change risks and identify measures to mitigate risk exposures. This could include procedures for assessing new developments or acquisitions on carbon performance.

⁴⁰ The EU limit will be tightened to 30% if other developed countries make a similar commitment and emerging economies such as China, India and Brazil take adequate action

⁴¹ GHG emissions in the EU-15 fell by 2.7 in the EU-15 between 1990-2006

Energy performance standards are being phased in under the EU Energy Performance of Buildings Directive, and the UK government has set a target for all new non-domestic buildings to be 'zero carbon' by 2019. Asset owners could ensure energy efficiency in the property portfolio is consistent with future energy and carbon performance standards to reduce exposure to potential compliance breaches and laggards.

For example, trustees could set a target for fund managers to ensure energy efficiency in a property portfolio improves by 30% against 2008 levels by 2020 to reduce carbon dioxide emissions. This would help reduce regulatory risk exposure and could enhance value as tenants and buyers seek to reduce their carbon footprints and benefit from operational cost-savings in energy-efficient buildings.

Alternative assets Alternative asset classes such as private equity, hedge funds, and commodities are yet to develop widespread tools to integrate environmental criteria into investment processes. Asset managers could be required to:

- Develop tools to measure carbon emission and risks associated with alternative assets.
- Improve transparency on carbon risks and opportunities in alternative asset classes.
- Develop approaches to integrating climate change factors into policies and practices to support due diligence and management of alternative assets.
- Where appropriate, use climate change as a value-driver in allocation to themed funds in order to generate alpha and enhance beta diversification.

Practical steps to manage climate change risks in pension funds

The Norwegian Government Pension Fund - Global could require asset managers to address climate change issues in order to address climate-related risks to the long-term value of fund.

Responsible investment could be used to deploy environmental issues as value drivers, with climate change incorporated alongside issues such as corporate governance in investment frameworks. Trustees could develop the following policies and processes to ensure climate change risks and opportunities are formally integrated into research, analysis, investment decision-making and the evaluation of portfolio performance:

Policies and processes	Statements/Implementation strategies
<ul style="list-style-type: none"> ▪ Establish an investment position on climate change in pension fund mandates. 	<ul style="list-style-type: none"> ▪ E.g. "We aim to manage the material risk that climate change poses to the financial performance of assets, in order to protect the fund's long-term returns." ▪ E.g. "We will require external investment managers to address potential climate change risks in our investment portfolio and request annual reports on how this is being achieved in investment strategies, processes and decision-making." ▪ E.g. "We will adopt climate change risk management and mitigation across our portfolio."
<ul style="list-style-type: none"> ▪ Allocate appropriate resources to address climate change risks and related criteria to manager selection 	<ul style="list-style-type: none"> ▪ Appoint a trustee with expertise in extra-financial issues to have responsibility for monitoring short, medium and long-term climate change risks in the portfolio and to communicate these to all trustees. ▪ Ensure trustees receive responsible investment training or advice from environmental research providers, investment consultants or fund managers. ▪ Include a requirement for investment managers, consultants and advisors to assess climate change risks and opportunities in Requests for Proposals. Potential questions to assess capabilities are outlined in Appendix iii. ▪ Appoint skilled managers likely to outperform a suitable benchmark on financial metrics and carbon efficiency over a specified economic cycle. ▪ Provide incentives for fund managers to integrate climate change as a value driver across all investment strategies and asset classes.
<ul style="list-style-type: none"> ▪ Require asset managers to assess material 	<ul style="list-style-type: none"> ▪ Request annual stock-level audits of portfolios to

<p>climate risks and use analysis from dedicated advisors/research providers.</p>	<p>identify and address potential climate change risks. Require carbon impact monitoring of portfolios to identify sector allocation and stock selection contributions to risk exposures.</p> <ul style="list-style-type: none"> ▪ Request that fund managers procure independent broker analysis covering quantitative climate change risks. ▪ Request sell-side brokers to analyse climate change risks in macro-economic and company-level analysis, covering relative GHG emission and disclosure levels, regulatory controls, governance and physical impacts. ▪ Sell-side researchers should include potential carbon costs in company valuations in exposed sectors in relevant due diligence and advisory work.
<ul style="list-style-type: none"> ▪ Incorporate climate change criteria into Investment Management Agreements. 	<ul style="list-style-type: none"> ▪ Integrate climate change risk management into ownership practices across equity and fixed income investment strategies. ▪ Ensure asset allocation processes incorporate greenhouse gas emission levels as a value-driver. ▪ Request that fund managers develop tools to integrate climate change risks and opportunities across all asset classes including emerging market equity strategies, corporate fixed income, property, infrastructure and private equity. ▪ Require asset managers to use a climate overlay strategy for the fund. Set criteria for the strategy eg. To underweight companies which exceed an emissions threshold relative to a chosen benchmark. Limits could be set for adjustments to weightings of holdings to maintain risk/reward ratios and tracking errors. ▪ Consider future carbon costs in any liability-driven investment strategies.
<ul style="list-style-type: none"> ▪ Set out a policy on how active ownership will be used to monitor and address climate change risks. Establish climate change criteria and the scope of issues for engagement and voting activities. 	<ul style="list-style-type: none"> ▪ Set an engagement mandate to cover climate risk risks. Set up resources for engagement and voting activities on climate-related issues. ▪ Establish criteria for selecting high-risk investee companies for engagement, such as failure to disclose greenhouse gas emissions in line with the

	<p>Greenhouse Gas Protocol⁴², GHG performance relative to sector averages, and carbon reduction strategies and governance.</p> <ul style="list-style-type: none"> ▪ Develop a proxy voting policy and procedures to set out the pension fund's approach to climate change. Proxy voting guidelines should identify voting criteria and provide voting instructions regarding climate change issues. ▪ Criteria could be based around goals to improve company disclosure and management of GHG emissions and related financial and regulatory risks and opportunities, and encourage consideration of these factors in operational and capital-planning decisions. ▪ Request fund managers to support resolutions on climate change disclosure, strategy and performance. ▪ Establish criteria to measure the success of engagement programmes within resource constraints. ▪ Allow appropriate time frames for evidence of changes and develop a strategy for follow up and action where companies fail to respond to shareholder influence on climate change governance and performance issues.
<ul style="list-style-type: none"> ▪ Performance monitoring frameworks and evaluation criteria for investment managers and consultants should incorporate climate change considerations. 	<ul style="list-style-type: none"> ▪ Set appropriate timeframes and criteria for benchmarking fund manager performance on climate change. ▪ Include climate change risk assessment in regular manager reviews. Fund managers could be formally evaluated on climate change performance over 5-year time frames. ▪ Link reward structures to long-term investment management performance.
<ul style="list-style-type: none"> ▪ Set out a framework to manage climate change risks over a range of time horizons. 	<ul style="list-style-type: none"> ▪ Regularly assess potential climate change liabilities faced by assets in the fund in the short, medium and long-term.
<ul style="list-style-type: none"> ▪ Communicate expectations to all trustees and 	<ul style="list-style-type: none"> ▪ Hold briefing seminars with trustees and fund

⁴² An international GHG corporate accounting and reporting standard developed by the World Business Council for Sustainable Development and the World Resources Institute

<p>fund managers and hold follow up meetings to ensure each IMA is implemented and complied with in full.</p>	<p>managers.</p>
<ul style="list-style-type: none"> ▪ Trustees and fund managers should report on how they are managing climate change risks in the pension fund. 	<ul style="list-style-type: none"> ▪ Include climate change analysis in annual monitoring reports. ▪ Trustee and asset managers should report engagement and proxy voting activities annually to ensure compliance with the climate change policy or guidelines, and to explain any apparent divergence.
<ul style="list-style-type: none"> ▪ Work with local authority pension funds and other collaborative bodies to promote good practice in research, analysis and portfolio management in order to enhance the cost-effectiveness and efficacy of the fund's climate change policy. 	<ul style="list-style-type: none"> ▪ Seek to enhance research, analysis and understanding of climate change implications, develop tools, comply with industry guidelines and ensure value for money. Initiatives, partnerships and alliances could include the UN Principles for Responsible Investment, Institutional Investors Group on Climate Change (IIGCC), Investor Network on Climate Risk (INCR), Enhanced Analytics Initiative, National Association of Pension Funds (NAPF), Carbon Disclosure Project, Local Authority Pension Fund Forum, Marathon Club, CERES, UKSIF, Just Pensions, and the Local Authority Pension Fund Forum (LAPFF).

Questions to assess fund managers on climate change capabilities

Trustee can assess the capacity of asset managers by asking the following questions:

<ul style="list-style-type: none"> ▪ Do asset managers have the resources to analyse the financial implications of climate change to portfolio returns?
<ul style="list-style-type: none"> ▪ Are they able to analyse the material climate-related regulatory risk exposure of investee companies in different geographies and sectors?
<ul style="list-style-type: none"> ▪ Are they able to cost-effectively assess the portfolio's climate change risks comparatively against benchmark indices?
<ul style="list-style-type: none"> ▪ What external research and analysis do managers use on environmental issues and how do they keep up with best practice?
<ul style="list-style-type: none"> ▪ Do fund managers have the ability to integrate climate change risks into the traditional investment process across equities and bonds?
<ul style="list-style-type: none"> ▪ Are they able to systematically build climate change factors into equity valuations?

<ul style="list-style-type: none"> ▪ How will they consider the potential material impact of climate change on companies in stock selection decision-making?
<ul style="list-style-type: none"> ▪ Do they work with partners/providers to manage material environmental risks?
<ul style="list-style-type: none"> ▪ What processes and methodologies do they have to manage climate change risk? How will they ensure that asset allocations do not significantly overweight stocks with high climate change risk exposures?
<ul style="list-style-type: none"> ▪ How will they evaluate climate impact risks during the timeframes over which investment decisions are made and over which investment performance is evaluated?
<ul style="list-style-type: none"> ▪ What are their voting and engagement policies, practices and procedures?
<ul style="list-style-type: none"> ▪ How transparent are voting and engagement activities and how do they measure efficacy?
<ul style="list-style-type: none"> ▪ Do they have the capacity to develop resources and tools to link climate performance with investment analysis across a variety of asset classes?
<ul style="list-style-type: none"> ▪ What are the fund managers' climate change policies?
<ul style="list-style-type: none"> ▪ How would they manage climate-related conflicts of interest between engagement and voting activities with different clients?
<ul style="list-style-type: none"> ▪ How will fund managers ensure value for money through strategies to integrate climate changes into research, analysis and portfolio management?

Questions for consultants

<ul style="list-style-type: none"> ▪ How will consultants provide expertise on climate change risks and opportunities?
<ul style="list-style-type: none"> ▪ How do they evaluate investment managers' capabilities on climate change risks?
<ul style="list-style-type: none"> ▪ Does the fund set adequate policies and incentives for investment managers to address climate risks over appropriate timeframes?
<ul style="list-style-type: none"> ▪ What processes and tools will they use to evaluate fund managers on their capacity and expertise to address material risks from greenhouse gas emission levels?
<ul style="list-style-type: none"> ▪ How will they assess fund managers' integration of carbon risks in decision-making on asset allocation?
<ul style="list-style-type: none"> ▪ How will they integrate climate change into advice to protect the long-term interests of pension fund beneficiaries?
<ul style="list-style-type: none"> ▪ What time frames and parameters should be used to benchmark fund managers on managing climate change risks and ensure value for money and efficacy?

Appendices

Appendix 1 Trucost methodology: Direct and indirect emissions

Analysis of corporate greenhouse gas emissions includes direct emissions that the company causes during combustion of a fuel, or through industrial processes, as well as emissions from direct suppliers to the company. A key source of most companies' indirect emissions from the supply of goods and services is electricity purchased from power companies. Direct and indirect emissions are important to a company's exposure to increased costs if required to pay for carbon credits. Including first tier indirect suppliers identifies risk that companies may outsource emissions, and remain exposed to carbon costs being passed on through higher prices for inputs.

Appendix 2 Extracts from 2008 Model Proxy Voting Guidelines

By the Shareholder Association for Research and Education:

Environmental issues

- [The fund] will vote for proposals asking companies to adopt the CERES principles. In addition, [the fund] recommends that companies adopt the UN Global Compact's three principles concerning the environment, including their supply chains
- [The fund] will vote for proposals calling for companies to adopt and comply with the Global Compact Guidelines and to report to shareholders on their progress in implementing them.
- [The fund] will vote for proposals that ask companies to adopt environmental standards specific to their industry or sector as long as these standards are at least as stringent as the CERES principles.

Environmental reporting

[The fund] encourages companies to report on their environmental performance. These reports should include companies' potential environmental liabilities, their performance against relevant performance criteria, their plans for improving their environmental performance and their progress in making those improvements.

Climate change

Climate change is emerging as a major risk for businesses. It has investment implications for shareholders and especially for institutional investors whose diverse portfolios expose them to risks across a wide range of economic sectors [...] Efforts to limit emissions of greenhouse gases may also give companies an opportunity to profit from emissions trading. In order to take advantage of this opportunity, companies must begin to assess how much greenhouse gas they are emitting and reduce their emissions to levels below regulatory limits.

[...] At a minimum, reports should include disclosure of the company's total historical, current and projected greenhouse gas emissions; an assessment of its exposure to risks of climate change; an analysis of its risk and emissions management; and an analysis of its risk related to greenhouse gas emissions regulation. Shareholder proposals on climate change have asked companies to report on their greenhouse gas emissions and their financial exposure for damages associated with climate change. Proposals have also asked companies to report on

research and actions to reduce their greenhouse emissions, to promote renewable energy and to reduce their use of fossil fuels.

- [The fund] will vote for proposals asking companies to report on the risks and opportunities they face related to climate change, provided this information is not already easily available to shareholders. We prefer that these reports be consistent with the Global Framework for Climate Risk Disclosure.
- Proposals calling for companies to reduce their greenhouse gas emissions will be evaluated on a case-by-case basis, taking into account companies' current levels of emissions and the effectiveness of any programmes they already have to reduce those emissions."

Appendix 3 UK legal position for pension fund trustees

On 3 July 2000, an amendment to the Pension 16 Environment Agency FTSE All-Share Environmental Disclosures Act 1995 came into force. It requires the Trustees of occupational pension schemes to disclose through their Statement of Investment Principles (SIPs) 'the extent (if at all) to which social, environmental or ethical considerations are taken into account in the selection, retention and realisation of investments'.

In October 2005 Freshfields Bruckhaus Deringer produced a legal framework for the integration of Environmental, Social and Governance (ESG) issues into institutional investment. This was undertaken for the Asset Management Group of the United Nations Environment Programme Finance Initiative. The report concluded that: 'Conventional investment analysis focuses on value, in the sense of financial performance... the links between ESG factors and financial performance are increasingly being recognised. On that basis, integrating ESG considerations into an investment analysis so as to more reliably predict financial performance is clearly permissible and is arguably required in all jurisdictions.' The same point was stressed by Mercer Investment Consulting in *A Climate for Change – A Trustee's Guide to understanding and addressing Climate Risk*, August 2005. In it Mercer advised: "Considering that both the physical and mitigation related policy impacts of climate change will influence the ability for companies to create and maintain wealth for shareholders (in the short- and long-term), pension trustees will want to ensure that these risks (and associated opportunities) are being addressed in relation to the funds in their care."

UK Government Myners Principles

The UK Government recently consulted on proposals to update the Myners Principles⁴³ to provide best practice guidance and tools to help trustees improve investment decision-making and governance. Proposals include recommendations that trustees take into account the risks associated with their liabilities valuation and management, and that they analyse factors affecting long-term performance.

Under the Government's proposed changes to the Myners Principles consulted on, trustees will need to be able to evaluate and challenge the advice they receive, and manage conflicts of interest. They will also need to:

⁴³ http://www.hm-treasury.gov.uk/consultations_and_legislation/myners/consult_myners_index.cfm

- pay particular attention to managing and contracting with external advisers (including advice on strategic asset allocation, investment management and actuarial issues).
- set out an overall investment objective(s) for the fund that takes account of the scheme's liabilities, the strength of the sponsor covenant as well as the attitude to risk of both the trustees and the sponsor, and clearly communicate these to advisers and investment managers.
- ensure fund managers have clear written mandates covering scheme and member expectations, which include clear time horizons for performance measurement and evaluation.
- take into account the risks associated with their liabilities valuation and management.
- analyse factors affecting long-term performance and receive advice on how these impact on the scheme and its liabilities.
- consider the potential for engagement to add value when formulating investment strategy and selecting investment managers.
- act in a transparent manner, communicating with stakeholders on issues relating to their management of investment, its governance and risks, including performance against stated objectives.

Appendix 4 Further sources of information

- **Consultation paper – Evaluation of the Ethical Guidelines for the Government Pension Fund – Global**
- **2008 Investor Summit on Climate Risk**, Final Report, 14 February 2008
- **Sustainable Investing, The Art of Long-Term Performance (draft)**, Ed. Cary Krosinsky and Nick Robins, Earthscan
- **Assessment of Implementation of Articles 3 and 4 of the Ethical Guidelines for the Government Pension Fund – Global**, The Albright Group LLC, 21 May 2008
- **Report Responsible Investment in Focus: How leading public pension funds are meeting the challenge**
A report jointly prepared by The United Nations Environment Programme Finance Initiative (UNEP FI) Asset Management Working Group (AMWG) and The United Kingdom Social Investment Forum (UKSIF) Sustainable Pensions Project (SPP)
<http://www.unepfi.org/fileadmin/documents/infocus.pdf>
- **Demystifying Responsible Investment Performance – A review of key academic and broker research on ESG factors**
A joint report by The Asset Management Working Group of the United Nations Environment Programme Finance Initiative and Mercer
http://www.responsible-investor.com/images/uploads/Demystifying_Responsible_Investment_Performance.pdf
- **The Responsible Investment Self-Assessment Template**
A tool for local government pensions schemes to take trustees through key responsible investment issues.

http://www.uksif.org/cmsfiles/press/UKSIF_Press_Release_-_Innovative_Assessment_Tool_for_LGPS_highlights_importance_of_Responsible_Investment_-_Final.pdf

- **Myners Principles consultation**
http://www.hm-treasury.gov.uk/media/3/7/consult_myner_310308.pdf
- **The Pensions Regulator – code – knowledge and understanding**
<http://www.thepensionsregulator.gov.uk/pdf/codeTkuFinal.pdf>
- **WWF – climate change and financial sector**
http://www.wwf.org.uk/filelibrary/pdf/allianz_rep_0605.pdf
- **UN PRI report on progress 2008**
http://www.unpri.org/files/2008PRI_Report_on_Progress.pdf
- **UN PRI report on progress 2007**
<http://www.unpri.org/report07/PRIReportOnProgress2007.pdf>
- **Responsible Investment Trustee Toolkit 2005, Just Pensions**
<http://www.uksif.org/cmsfiles/jp/Just%20Pensions%20Trustee%20Toolkit%20-%20Final.pdf>
- **A climate for change, A trustee's guide to understanding and addressing climate risk, IIGCC**
http://www.iigcc.org/docs/PDF/A_climate_for_change.pdf
- **Local Government Responsible Pension, Assessing responsible investment leadership by Local Government Pension Schemes, UKSIF, LAPFF, CIPFA**
http://www.uksif.org/cmsfiles/281411/UKSIF_LocalGov_RespPen.pdf
- **Responsible Business; Sustainable Pension, How the Pension Funds of the UK's Corporate Responsibility Leaders are approaching responsible investment**
http://www.uksif.org/cmsfiles/281411/UKSIF_Responsible_Business_Sustainable_Pension_Report.pdf

Appendix 5 About Trucost

Trucost Plc is a world-leading environmental research organisation which helps companies and investors understand the environmental impacts of business activities. Trucost provides data and analysis on company emissions and natural resource usage in financial as well as quantity terms to help investors, fund managers and analysts understand how environmental issues could affect companies' future earnings. Trucost's investor clients use the information to assess the carbon or environmental footprints of their portfolios, to identify differences in performance, to address environmental risks and create structured products with lower carbon or environmental impacts.

Institutional investors use Trucost's research to support due diligence and active engagement activities by incorporating environmental performance measurement into their investment decisions. Trucost provides fund sub-advisory services for Merrill Lynch Investment Managers, UBS, GLG Partners and other blue chip financial companies. Trucost's investor clients include BlackRock, CCLA Investment Management, Crédit Agricole Asset Management, Environment Agency Pension Fund, Fond de Réserve pour les Retraites

(FRR), Fortis Investment Management, Henderson Global Investors, Hermes Pensions Management Ltd, CalPERS, CalSTRS, Morley Fund Management, VicSuper and Universities Superannuation Scheme (USS).

"Trucost's ability to dig out the data about the environmental consequences of production is absolutely second to none anywhere in the globe," David Pitt-Watson, Chief Executive, Hermes Focus Asset Management

Trucost is a signatory of the United Nations Environment Programme Finance Initiative (UNEP FI) Global Roundtable and has offered expert advice and research to major corporations, institutional investors and to Government departments and associated agencies since its launch in 2000.

Trucost tracks data on the environmental impacts and disclosures of over 4,000 companies and has the world's largest record of greenhouse gas emissions. Coverage includes the FTSE All-Share, S&P 500, Russell 1000, Nikkei 225, DJ STOXX 600, MSCI World Developed, MSCI Europe, MSCI Asia ex-Japan and ASX 200 indices.

Trucost has considerable experience and expertise in the area of environmental performance, analysis and reporting, having researched and written the UK Government's environmental reporting guidelines for business, released in January 2006.⁴⁴

⁴⁴ <http://www.defra.gov.uk/environment/business/envrp/pdf/envkpi-guidelines.pdf>