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ACA conference – B16

Environmental risks: implications for pensions advice

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IFoA Resource and Environment Board

02 February 2016

The challenge of climate change

"This Agreement … aims to [hold] the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C"

The Paris Agreement, 12 December 2015

"the carbon budgets associated with a 2ºC threshold demand profound and immediate changes to the consumption and production of energy."

Kevin Anderson, Professor of Energy and Climate Change, December 2015

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The challenge of climate change

Have you considered the implications?

Are you discussing it with your clients?

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Today's session

1. Environmental risks
2. Implications for pensions
3. Practical responses

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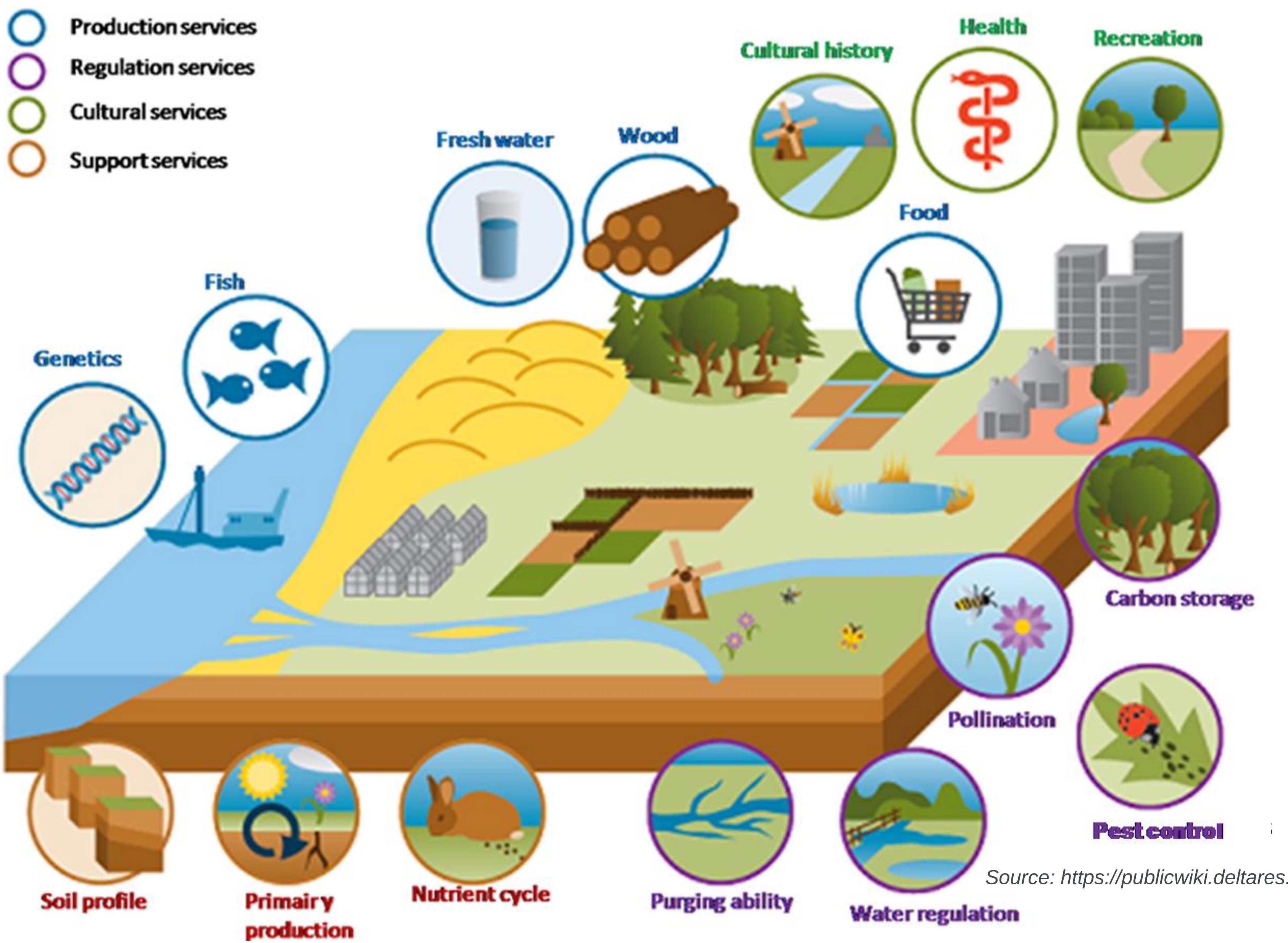
Environmental risks

A major source of risk and uncertainty for the economy and financial markets

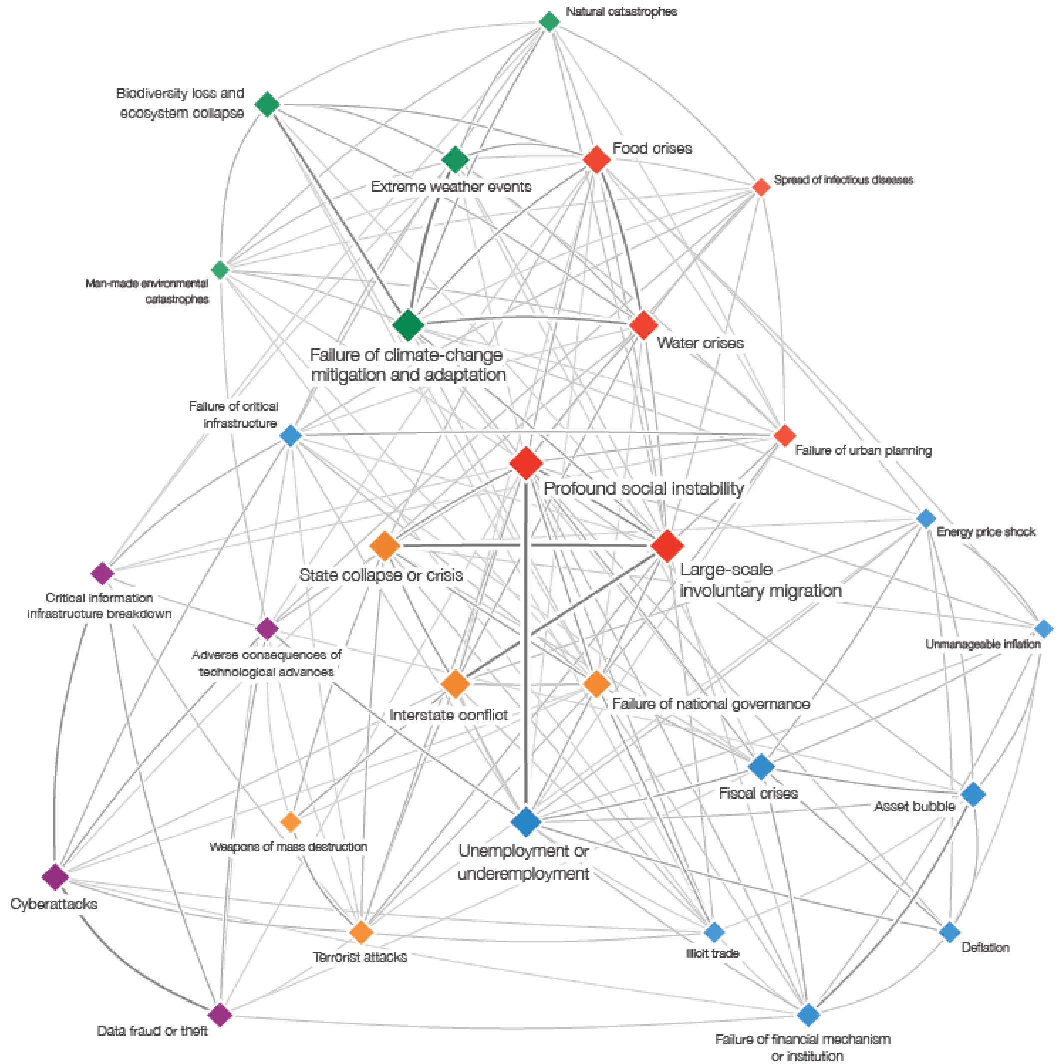
What are the major environmental risks to the economy?

Economic activity fundamentally relies on the environment



Source: https://publicwiki.deltares.nl

Our economic, social and environmental systems are highly interconnected



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 Source: The Global Risks Interconnections Map 2016, World Economic Forum, Global Risks Report (2016)

Environmental risks can impact through diverse routes

Type of risk	Level of impact
Physical (eg extreme weather)	Company
Policy (eg emissions reduction)	Supply chain
	Macro-economic

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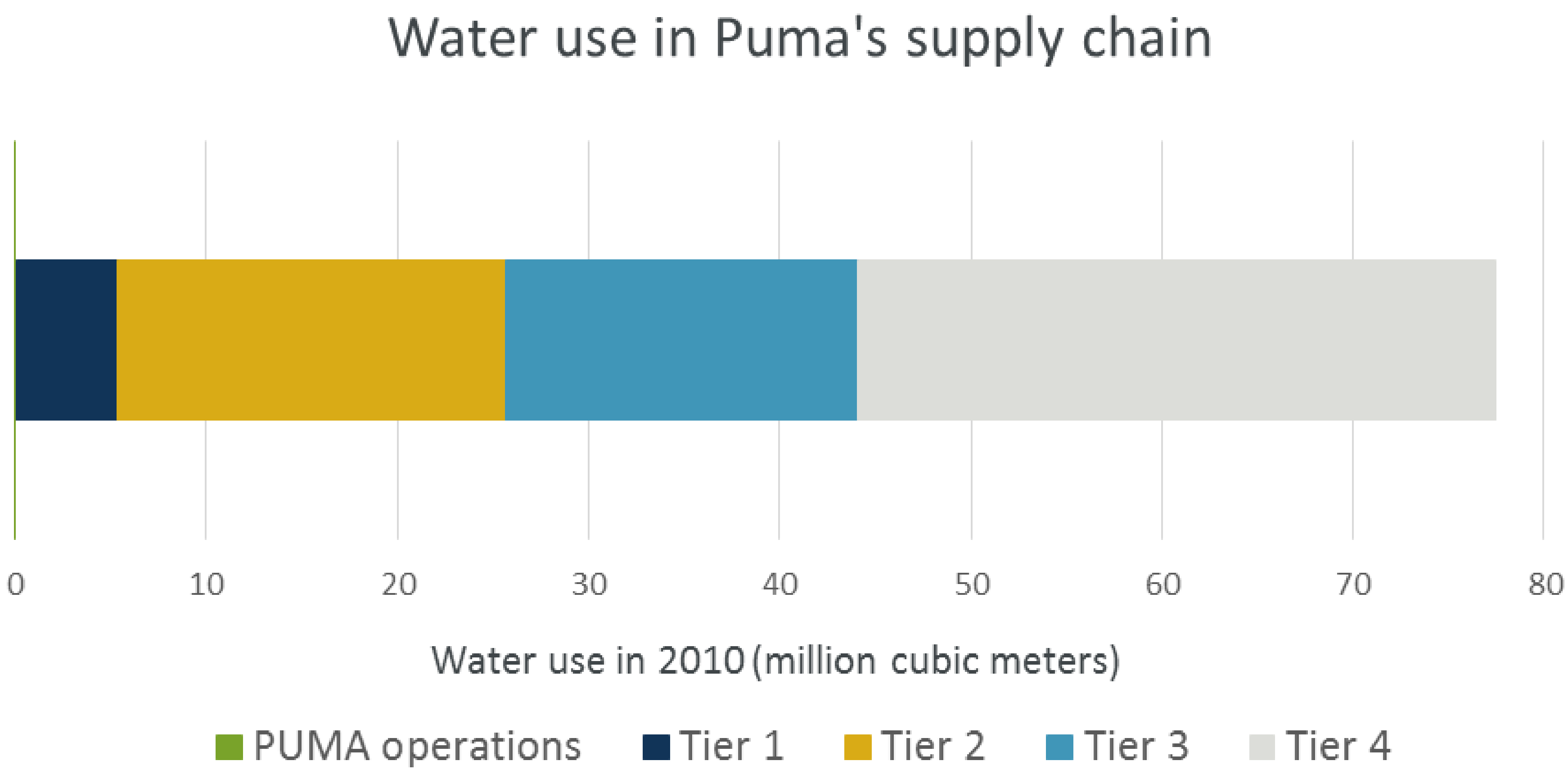
Supply chain risk exposure can be significant



Source: PUMA's Environmental Profit and Loss Account for the year ended 31 December 2010

Challenges for environmental risk modelling

Complex systems

Political and social responses

Gaps in scientific knowledge

Uncertain timing

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Environmental risks: key points

- The economy's fundamental reliance on the environment is underappreciated
- Consideration of environmental risks requires a holistic approach due to their interconnectedness
- The precise nature and timing of impacts is uncertain, but this is not a reason to ignore the risks

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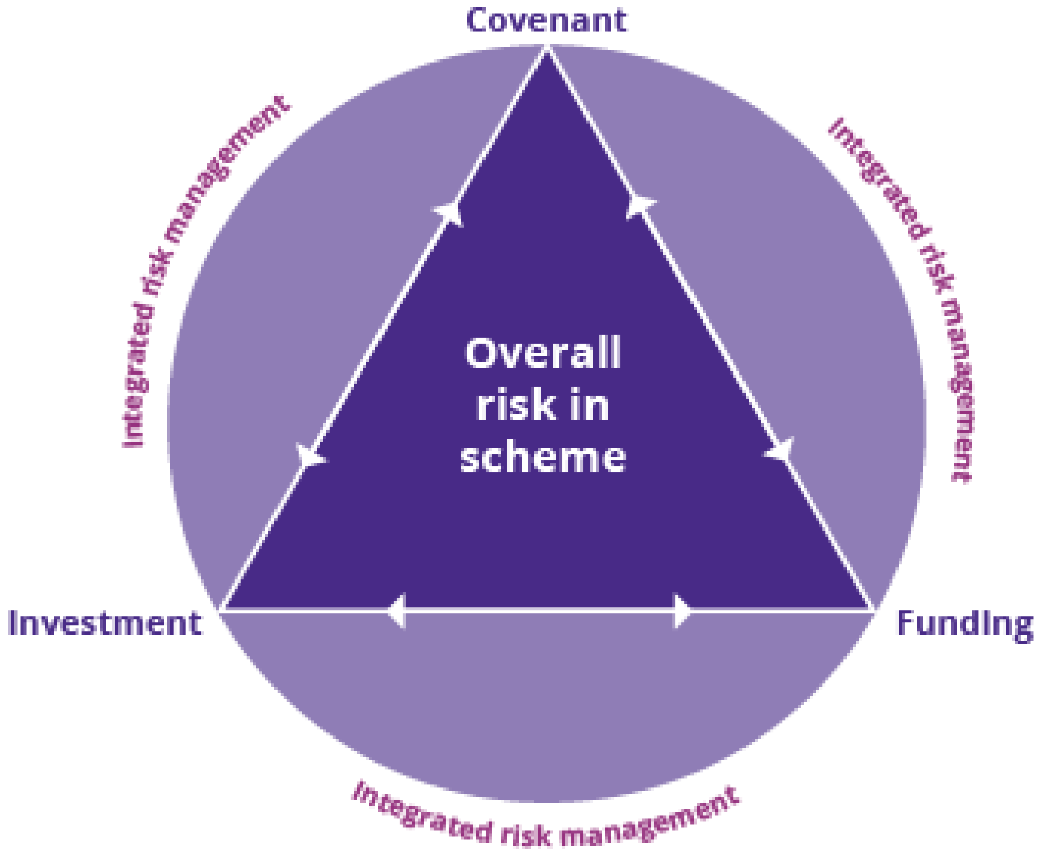
Implications for pensions

Potential effects on covenant strength, investment returns, DB funding, buy-out costs, DC adequacy, systemic risk

DB schemes: covenant, investment and funding risks



 Source: The Pensions Regulator, Integrated risk management guidance (December 2015)

Example: DB scheme sponsored by car manufacturer

What are the environmental risks to the sponsor covenant?

Covenant risk: questions to consider

1. What are the main environmental risks faced by the business over the short, medium and long term?

2. How does the company identify, assess and mitigate these risks?

3. Is the business model robust under a wide range of possible futures?

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Investment risks: asset class exposures

Equities

Corporate debt

Property

Infrastructure

Commodities

Interest rates

Inflation

Exchange rates

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Funding risks

How might Technical Provisions be affected?

How might Recovery Plans be affected?

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Solvency risks: impacts on bulk annuity pricing


BANK OF ENGLAND
PRUDENTIAL REGULATION AUTHORITY

The impact of climate change on the UK insurance sector

A Climate Change Adaptation Report by the Prudential Regulation Authority

September 2015

1. How might liability cashflows be affected?

2. How might asset returns be affected?

3. How might solvency capital be affected?

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What are the implications for DC pension provision?

Macro effects: implications for policy and regulators

How might the PPF be affected?

How concerned should we be about systemic risks?

Implications for pensions: key points

- Environmental issues pose inter-related risks for DB covenant, investment and funding
- Could increase annuity prices and exacerbate inadequacy of DC pension provision
- Could affect many pension schemes at a similar time, creating difficulties for the PPF and the macro-economy

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Practical responses

By trustees, scheme sponsors, policymakers, regulators, actuaries and the actuarial profession

ertise Sponsorship Thought leadership Progress Community Sessional Meetings Education Working parties Volunteering Research Shaping the future Networking Professional support Enterprise and risk Learned society Opportunity International profile Journals Suppo

Micro-level responses: What actions could be taken…

…by trustees?

…by sponsors?

…by actuaries?

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Micro-level responses: possible actions

- Include environmental risks in covenant assessment

- Adopt responsible investment practices to mitigate risks to investments (both DB and DC)

- Consider inclusion of environmental risks in pension modelling (eg stochastic models, scenario analysis)

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Macro-level responses: What actions could be taken…

…by policy-makers?

…by regulators?

…by the actuarial profession?

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Macro-level responses: IFoA actions

- Resource and Environment Board aims:
  - To support actuaries in the existing practice areas with resource and environment issues
  - To develop the actuarial profession, enabling actuaries to work in the resource and environment area
  - To serve the public interest

- Resource and Environment is a public policy theme

- Working party looking at implications of resource and environment issues for the work of pensions actuaries

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In summary

- Environmental issues are a major source of risk and uncertainty for the economy and financial markets
- They pose inter-related risks for DB covenant, investment and funding, which should be considered in today’s advice
- This is a public interest issue which needs attention by policy-makers and regulators, not just individual schemes and advisers

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Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.

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Appendix 1

Sources of further information

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IFoA Resource and Environment links

- Sign up for the Resource and Environment newsletter:
  http://www.actuaries.org.uk/news-and-insights/newsletters#Resource%20and%20environment
- Climate change policy briefing (2015):
  http://www.actuaries.org.uk/news-and-insights/media-centre/media-releases-and-statements/risk-management-approach-essential
- Commissioned research on Limits to Growth (2013):
  http://www.actuaries.org.uk/documents/resource-constraints-sharing-finite-world-evidence-and-scenarios-future
- Literature reviews:
  - Sustainability and the financial system (2015)
    http://www.actuaries.org.uk/documents/sustainability-and-financial-system-review-literature-2015
  - Climate change and resource depletion (2011)
    http://www.actuaries.org.uk/documents/climate-change-and-resource-depletion-challenges-actuaries-review-literature-2011
  - Climate change and resource depletion (2010)
    http://www.actuaries.org.uk/documents/climate-change-and-resource-depletion-review-literature

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Further reading

- World Economic Forum – Global Risks Report
  http://reports.weforum.org/global-risks-2016/
- IPCC AR5 Synthesis Report - Key points and questions
  https://www.gov.uk/government/publications/ipcc-5th-assessment-report-synthesis-report/key-points-and-questions-ipcc-ar5-synthesis-report
- PRA - The impact of climate change on the UK insurance sector
  http://www.bankofengland.co.uk/pra/documents/supervision/activities/pradefra0915.pdf
- Mercer – Investing in a time of climate change 2015
  http://www.mercer.com/services/investments/investment-opportunities/responsible-investment/investing-in-a-time-of-climate-change-report-2015.html
- Kay Review – UK equity markets and long-term decision-making
  https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/253454/bis-12-917-kay-review-of-equity-markets-final-report.pdf
- Law Commission - Fiduciary Duties of Investment Intermediaries
  http://www.lawcom.gov.uk/project/fiduciary-duties-of-investment-intermediaries/

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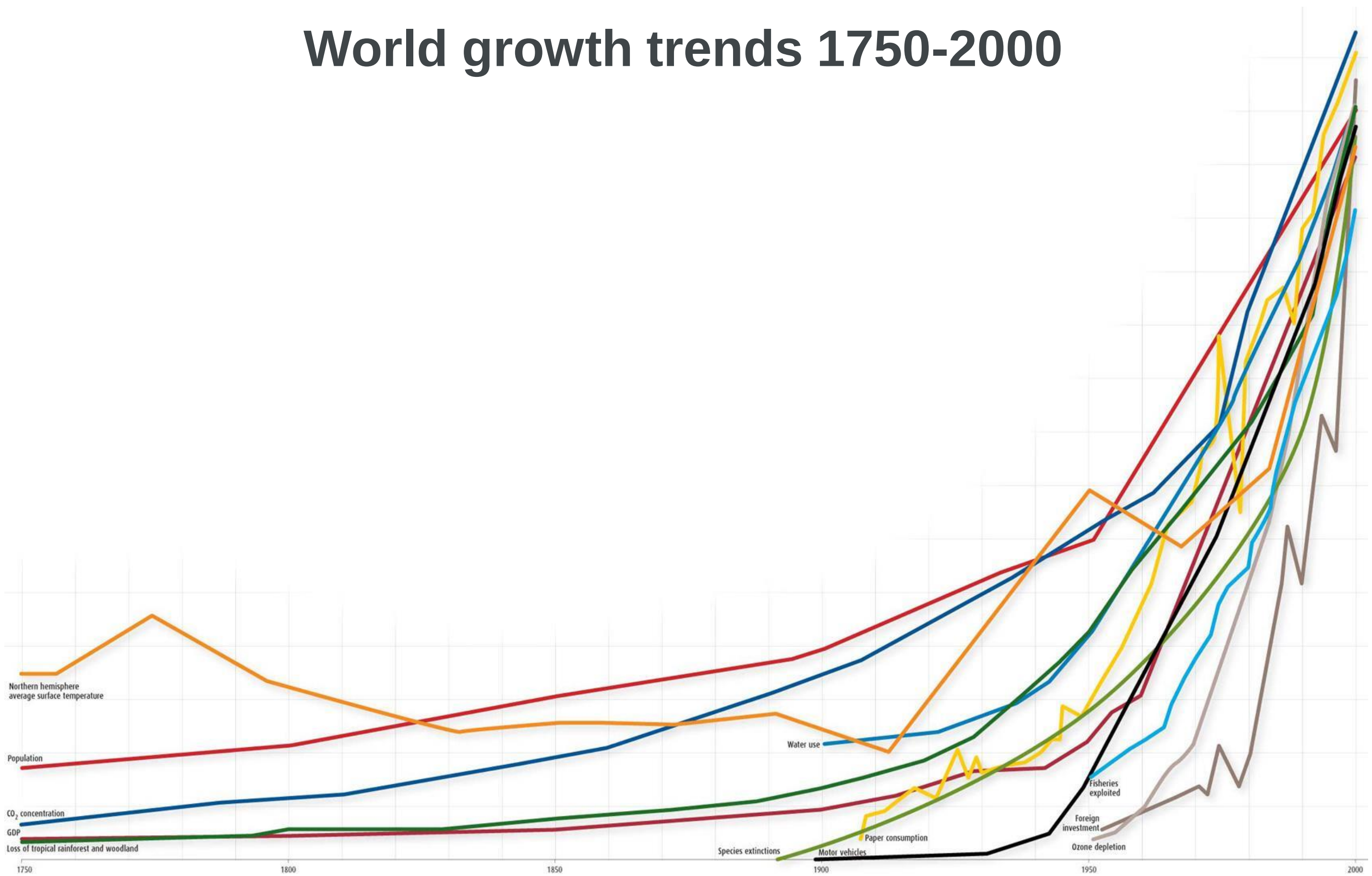
Appendix 2

Supplementary material

We live in an exponential world

World growth trends 1750-2000



1750 1800 1850 1900 1950 2000

1. GDP
2. Population
3. Paper consumption
4. Motor vehicles
5. Foreign investment
6. CO_2 concentration
7. Loss of tropical woodland
8. Water use
9. Species extinction
10. Fisheries exploited

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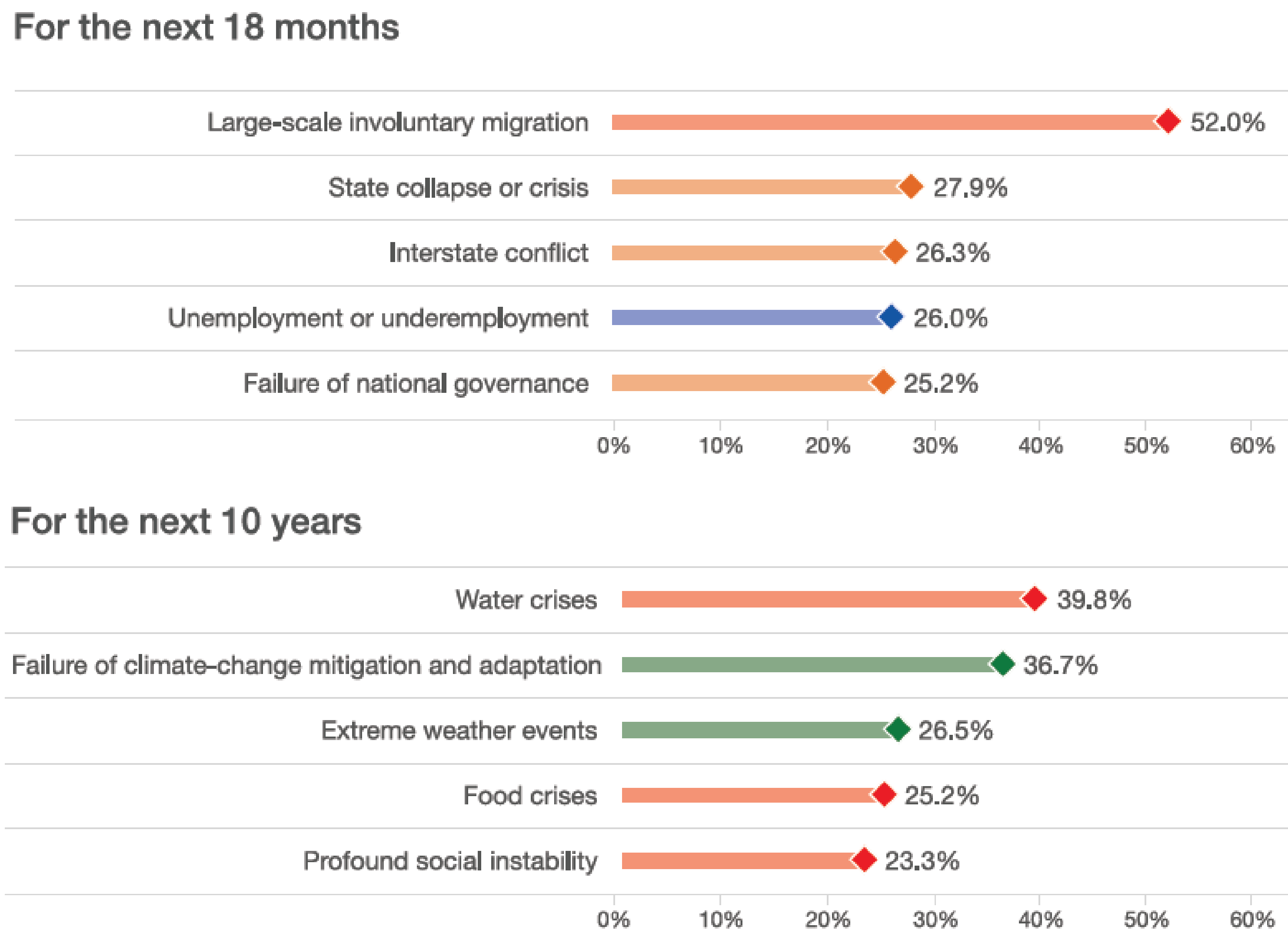
Source: [New Scientist, "How our economy is killing the earth", 16 October 2008]

WEF: Top 5 global risks of highest concern



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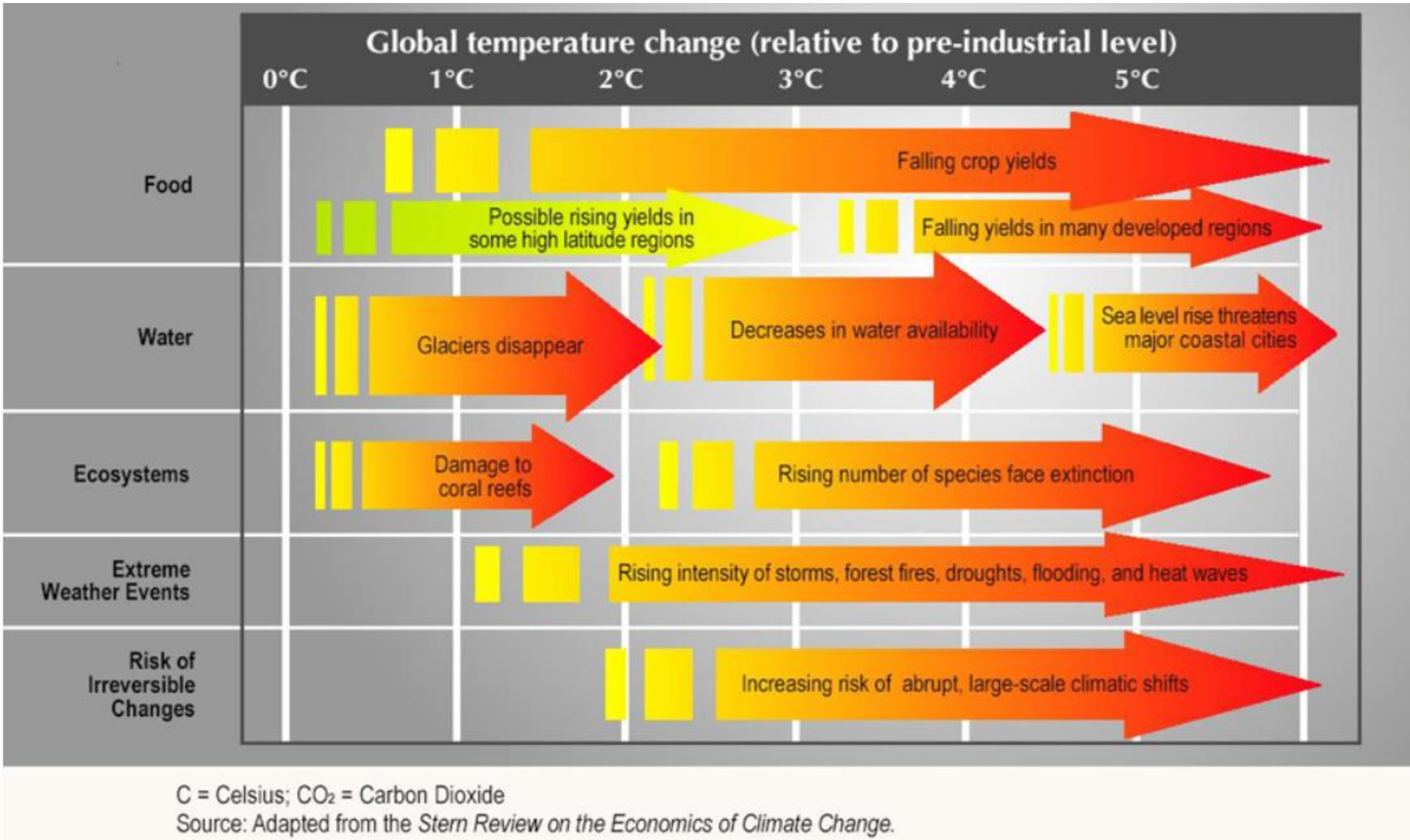
Source: World Economic Forum, Global Risks Report (2016)

Projected impacts of climate change



Source: http://www.challengetochange.org/climate.htm

Limiting temperature rises to 2ºC is expected to give better financial outcomes

VaR due to climate change	Value at Risk* Mean (average)	Value at Risk* 5°C	Value at Risk* 6°C	Percentage reduction in risk is warming is kept within 2°C Mean (average)	Percentage reduction in risk is warming is kept within 2°C 5°C	Percentage reduction in risk is warming is kept within 2°C 6°C
Present value from the perspective of a private investor	US$4.2trn	US$7.2trn	US$13.8trn	50%	63%	76%
Present value from the perspective of a government	US$13.9trn	US$18.4trn	US$43.0trn	57%	71%	85%

*Value at Risk over the period to 2100 as a result of climate change to the total global stock of manageable financial assets (quantified in 2015 at US$143trn)

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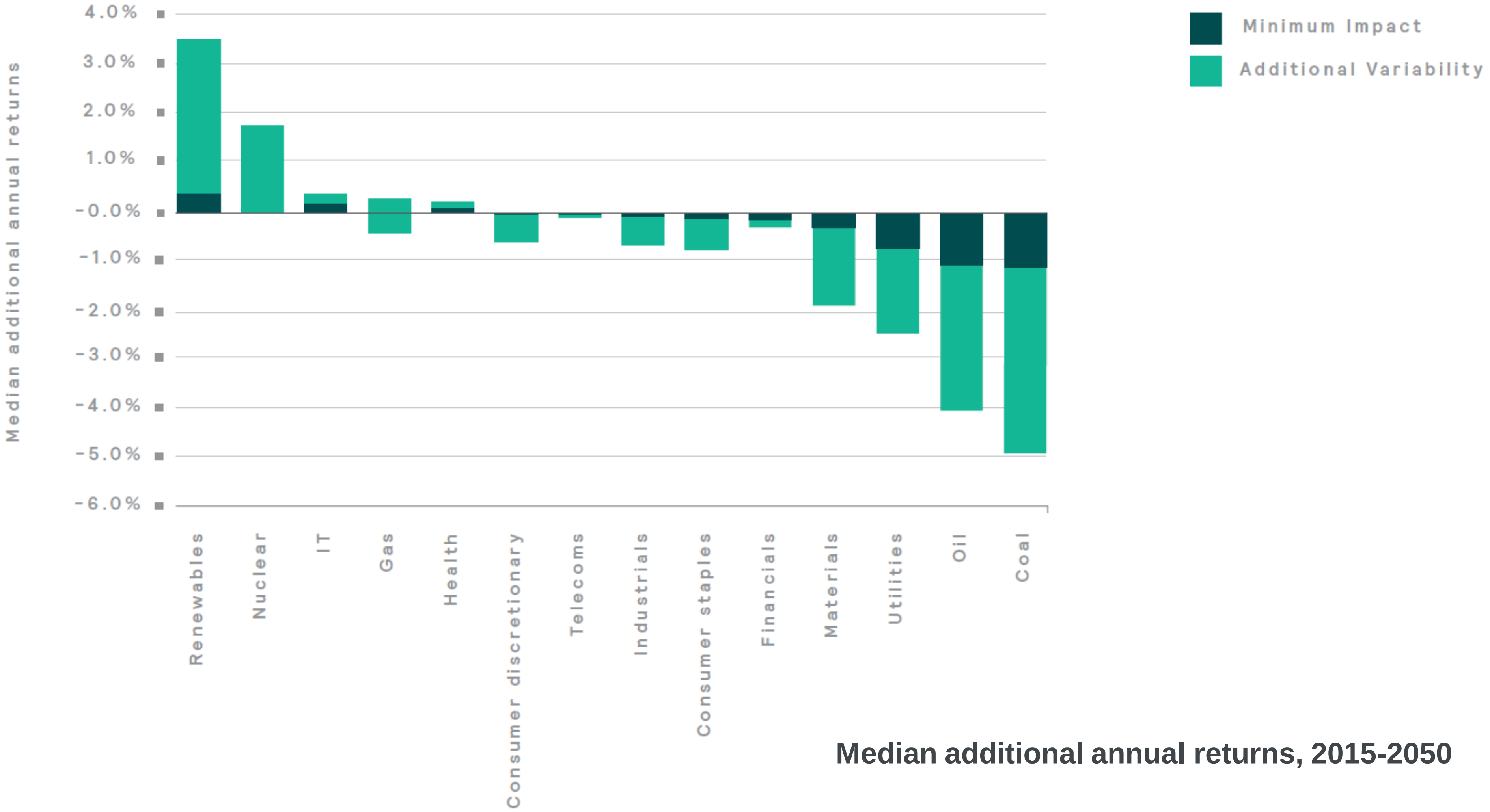
Source: The Economist Intelligence Unit (2015) "The cost of inaction"

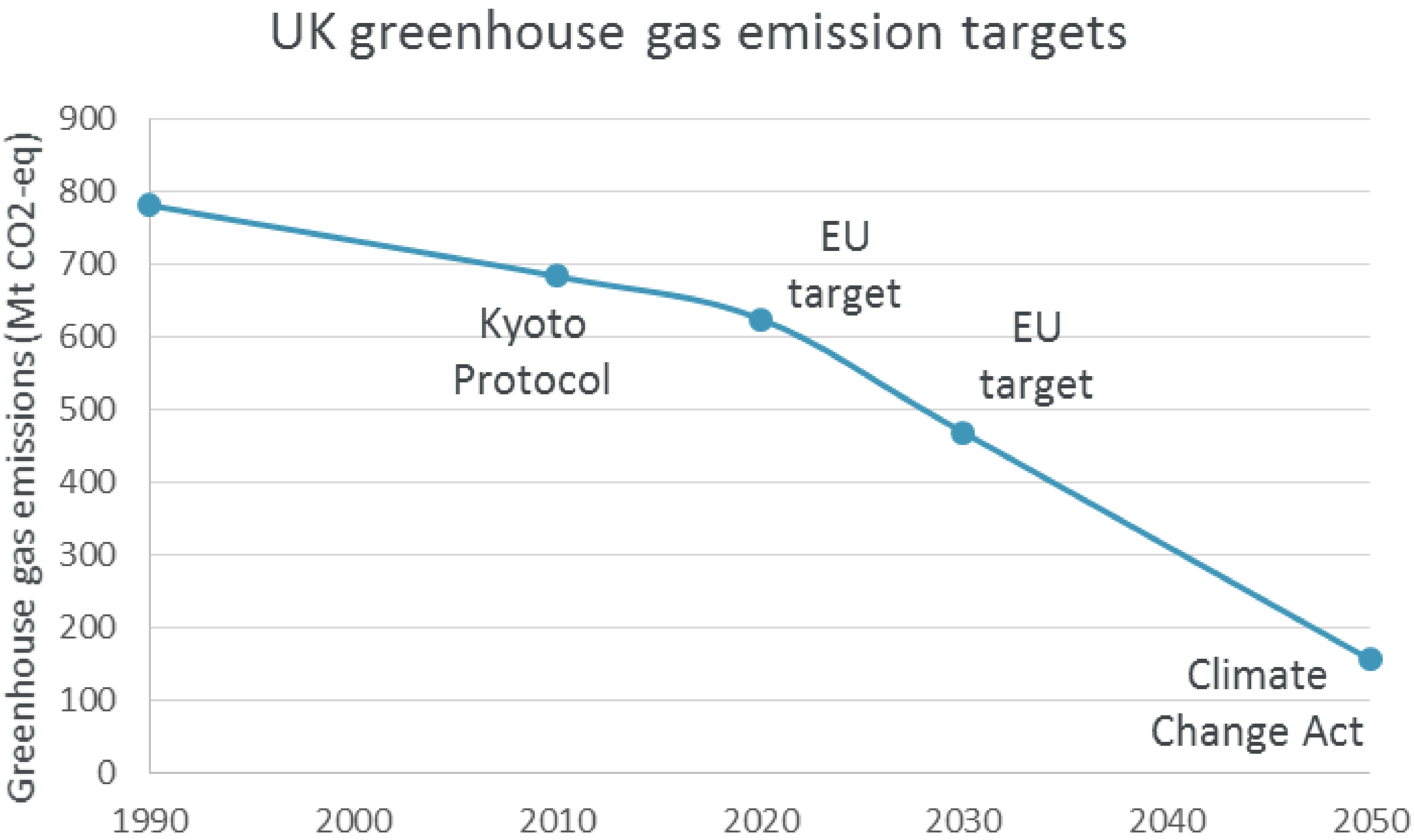
Climate impacts will vary significantly by industry sector



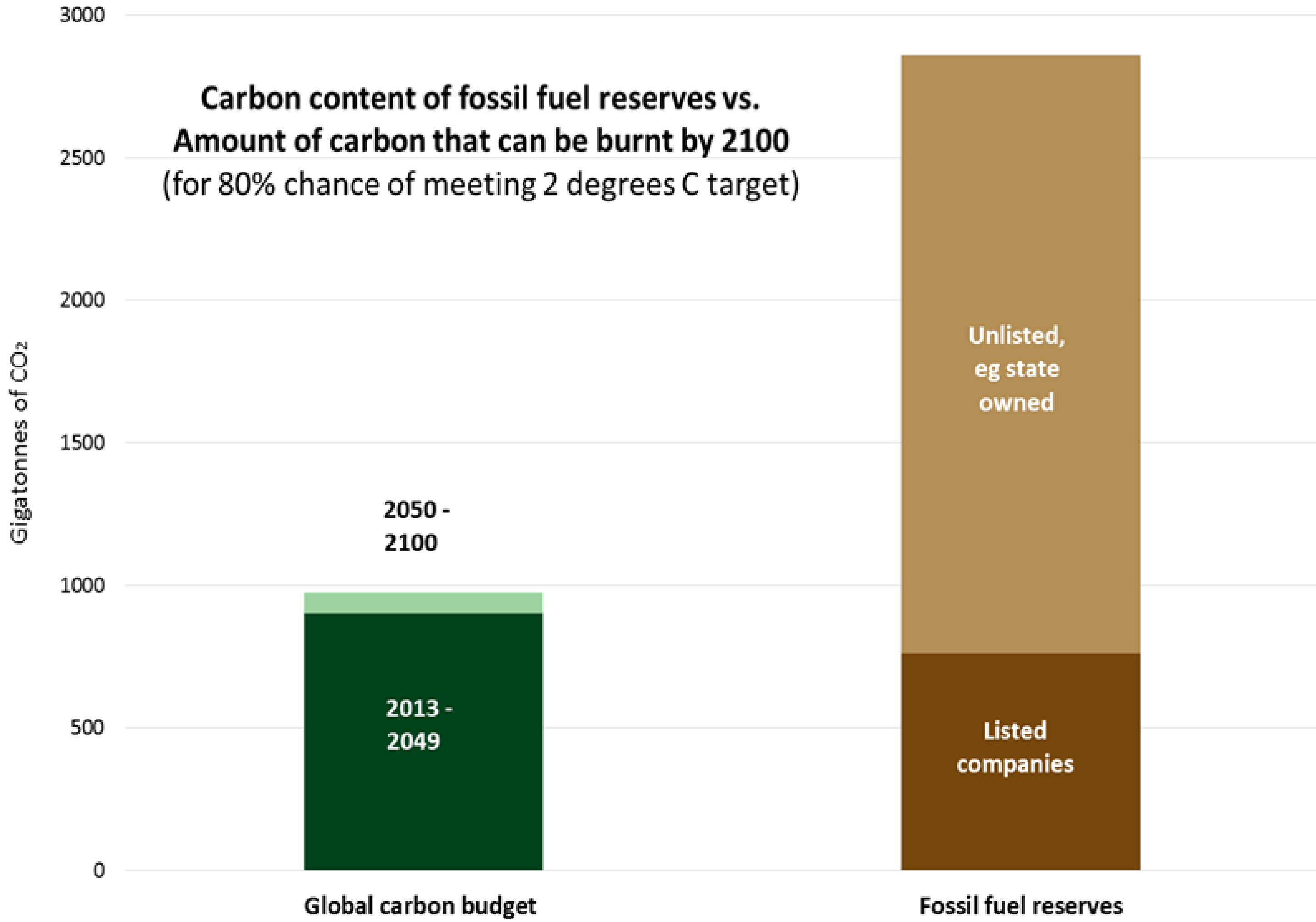
Median additional annual returns, 2015-2050

 Source: [Mercer (2015) "Investing in a time of climate change"]

Climate change targets imply economic transformation



Fossil fuel assets risk becoming stranded



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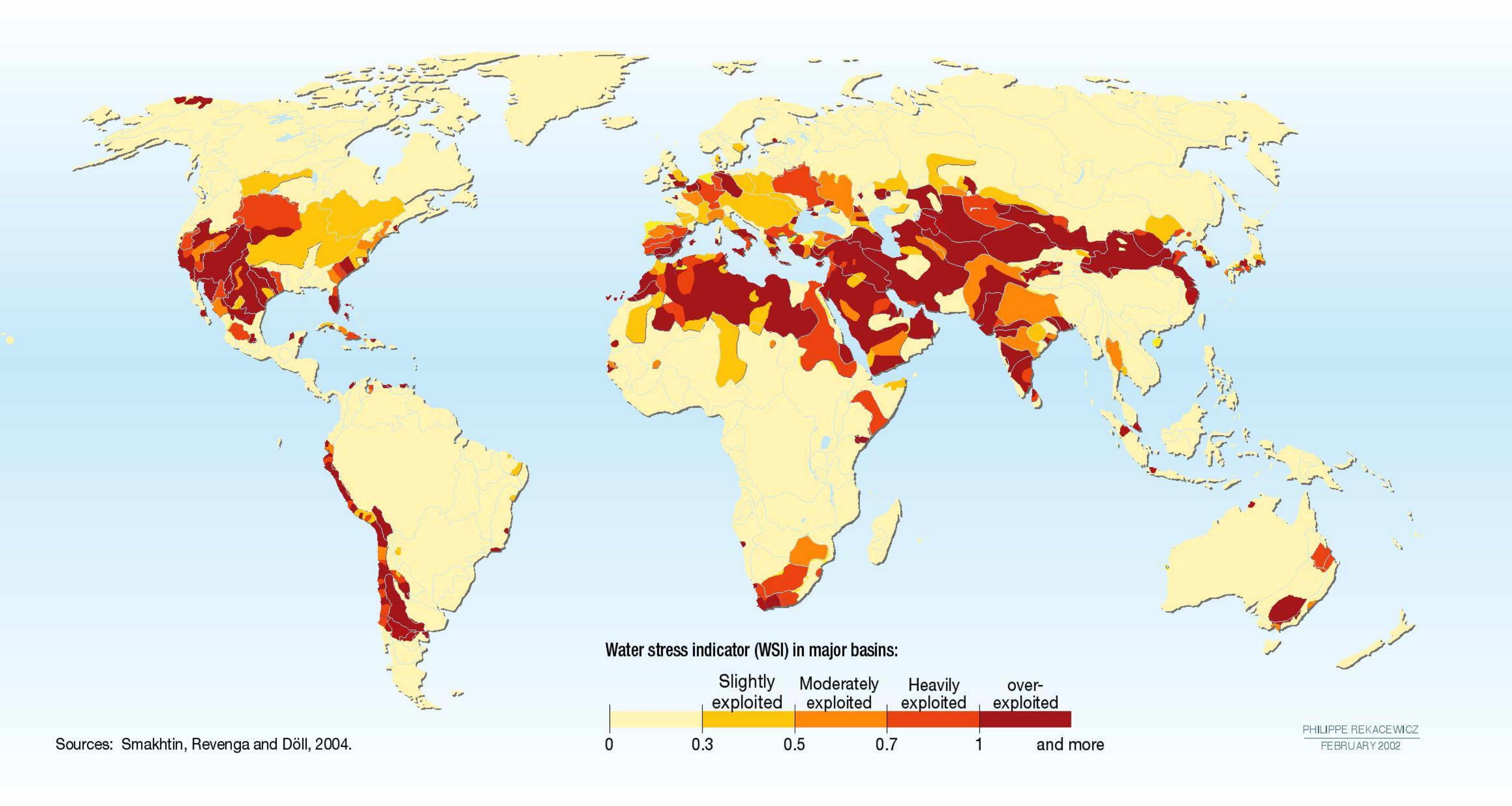
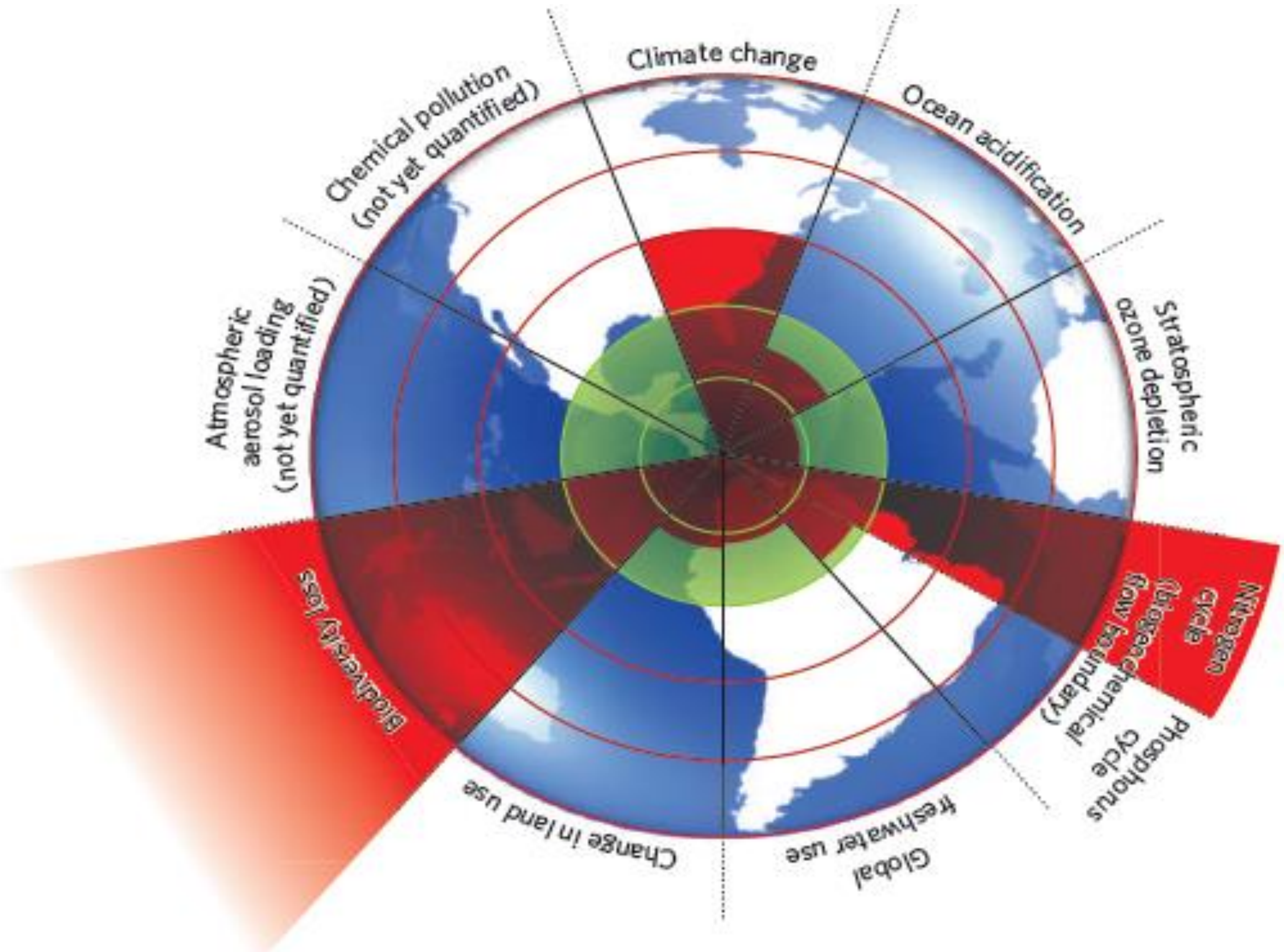
Source: http://www.carbontracker.org/report/wasted-capital-and-stranded-assets/

Water scarcity is an increasing concern



Source: http://www.unep.org/dewa/vitalwater/jpg/0222-waterstress-overuse-EN.jpg

Planetary boundaries are already being exceeded



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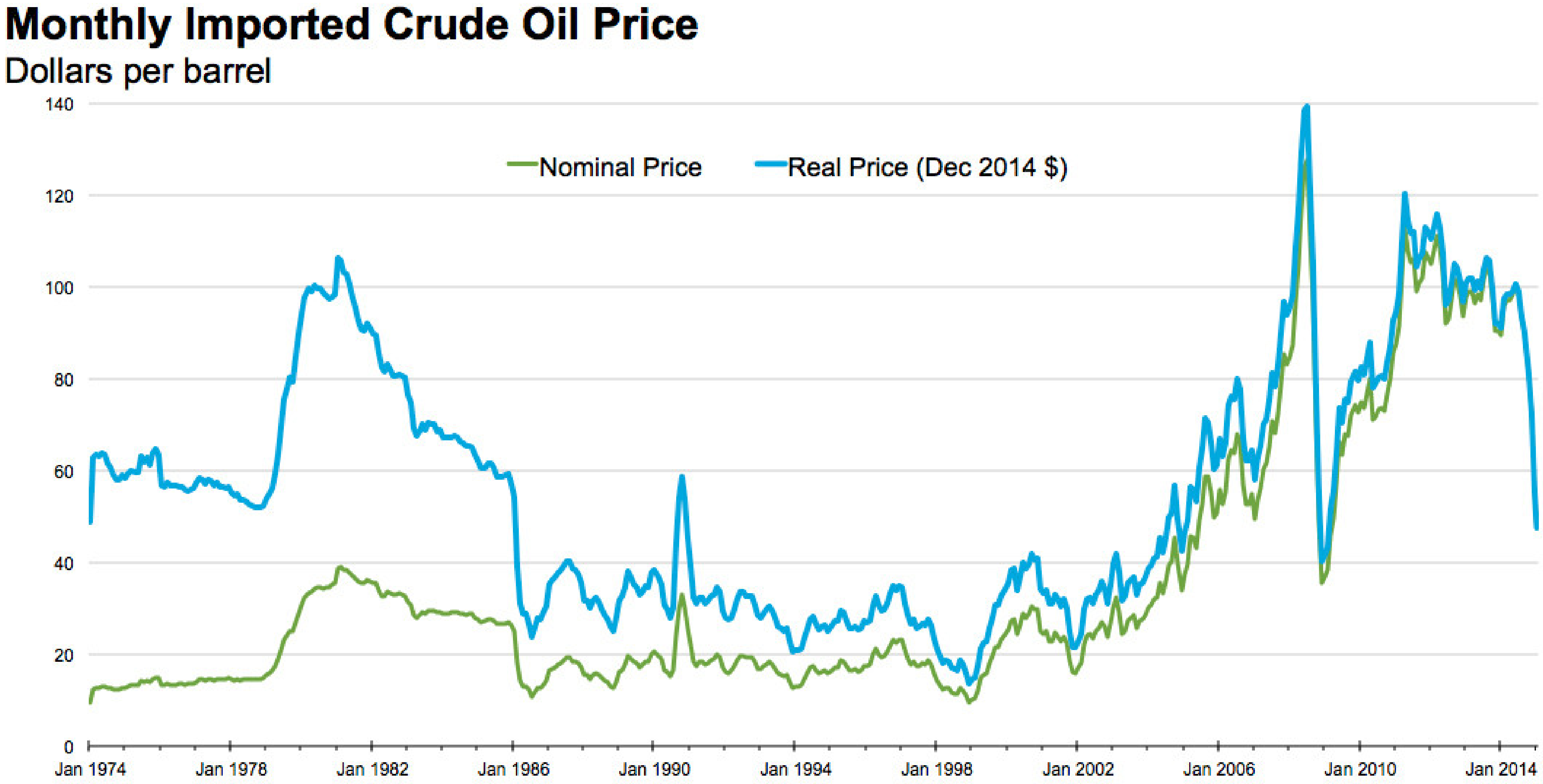
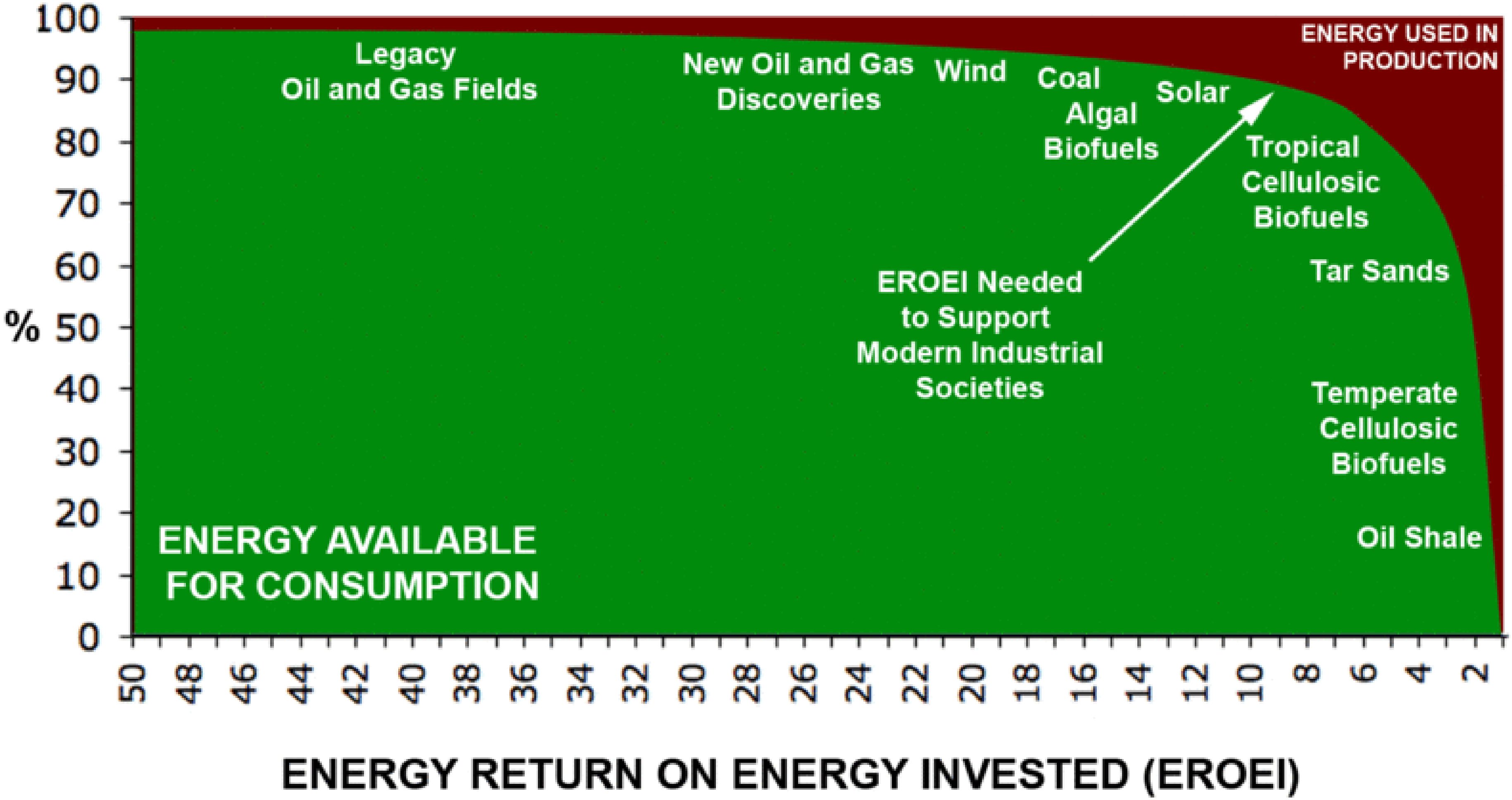
 Source: [Rockstrom et al, "A safe operating space for humanity", Nature 2009]

Energy prices are uncertain and volatile



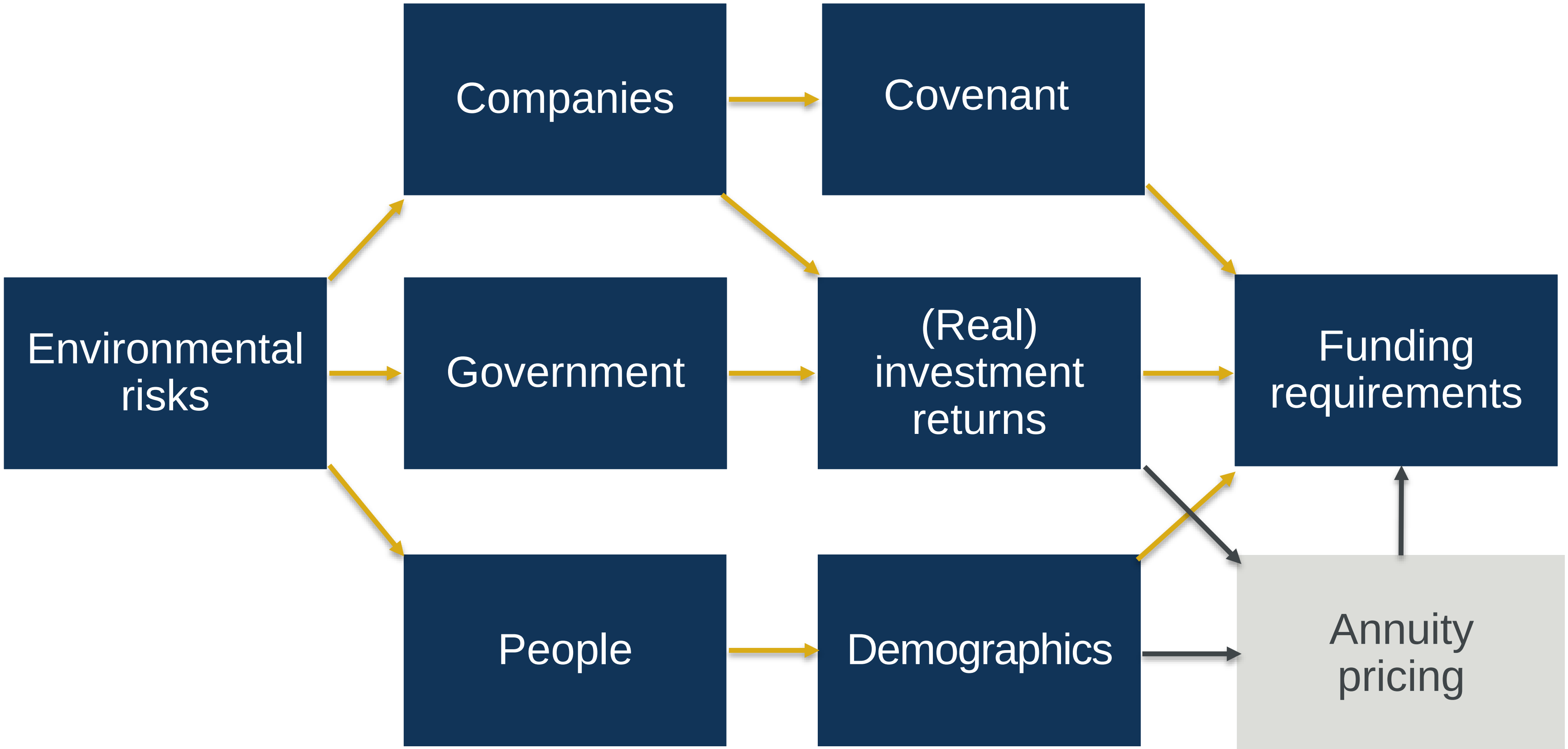
Source: http://www.huffingtonpost.com/2015/01/13/crude-oil-price-chart_n_6463054.html

Trend towards lower quality energy sources



Source: http://en.wikipedia.org/wiki/File:Net_energy_cliff.gif

Schemes are exposed to environmental factors through investment, covenant & demographics



Simplified – more complex in practice!

Managing environmental risks can improve financial performance

A recent review of sustainability research found that:

- 90% of the cost of capital studies show that sound sustainability standards lower the cost of capital.
- 88% of the studies show that solid sustainability practices result in better operational performance.
- 80% of the studies show that stock price performance is positively influenced by good sustainability practices.

Source: Clark, GL, Feiner, A, and M. Viehs. (2015) “From the Stockholder to the Stakeholder: How Sustainability Can Drive Financial Outperformance.” http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2508281

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Responsible investment

"Responsible investment is an approach to investment that explicitly acknowledges the relevance to the investor of **environmental, social and governance (ESG) factors**, and the long-term health and stability of the market as a whole. It recognises that the generation of **long-term sustainable returns** is dependent on stable, well-functioning and well governed social, environmental and economic systems."

Source: UN Principles for Responsible Investment

Stewardship

“Stewardship aims to promote the **long term** success of companies in such a way that the ultimate providers of capital also prosper. Effective stewardship benefits companies, investors and the economy as a whole.”

Source: FRC Stewardship Code

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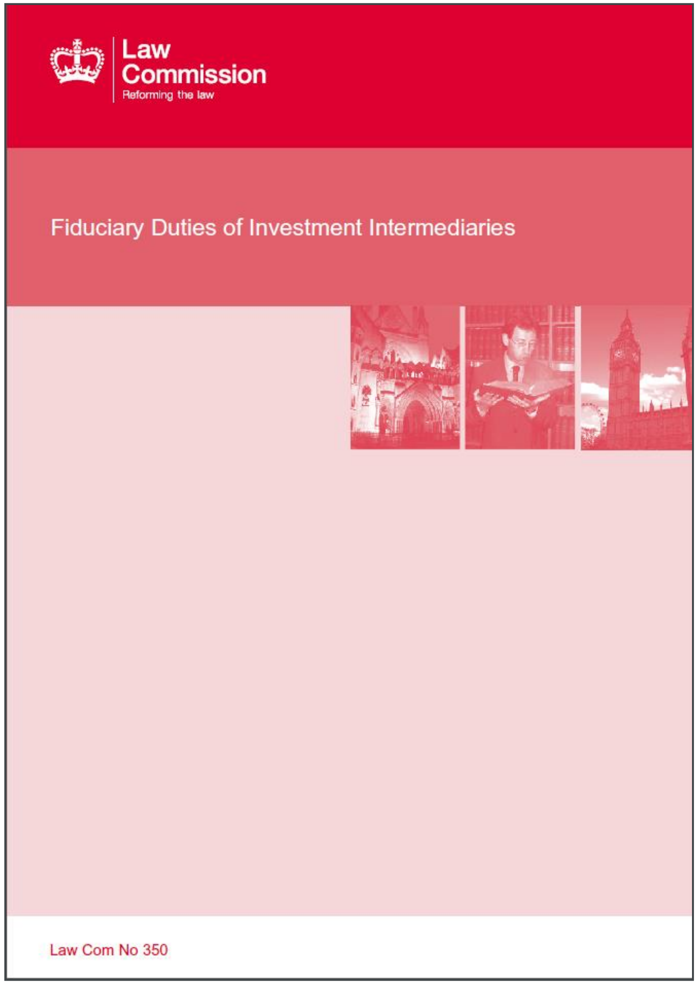
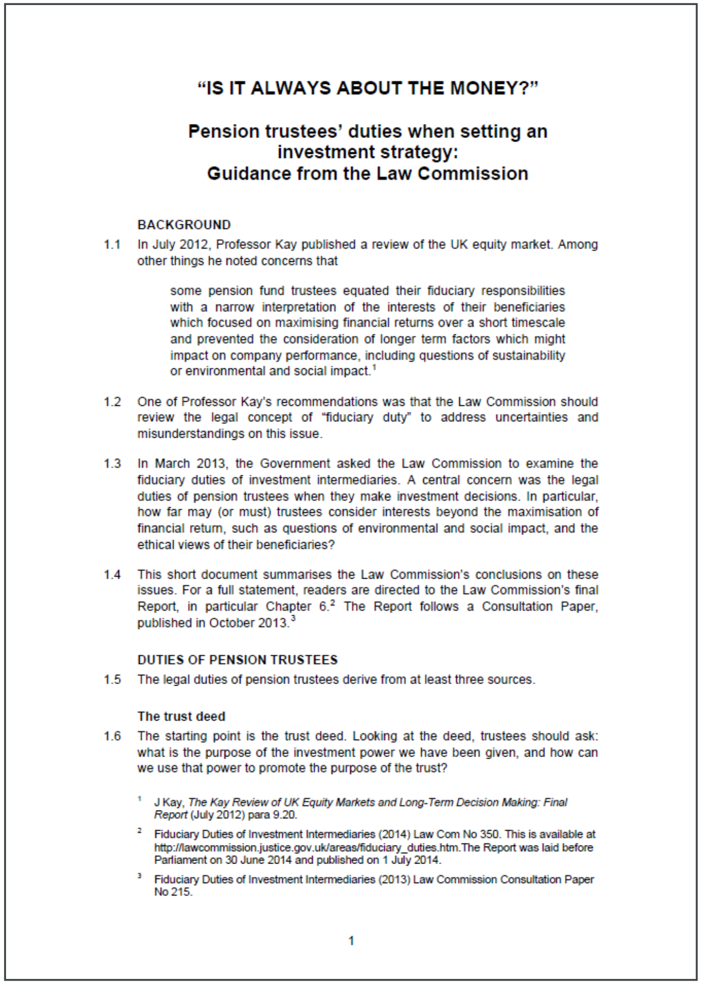
Law Commission has clarified “fiduciary duty”





“IS IT ALWAYS ABOUT THE MONEY?”

Pension trustees’ duties when setting an investment strategy: Guidance from the Law Commission

BACKGROUND

1.1 In July 2012, Professor Kay published a review of the UK equity market. Among other things he noted concerns that

> some pension fund trustees equated their fiduciary responsibilities with a narrow interpretation of the interests of their beneficiaries which focused on maximising financial returns over a short timescale and prevented the consideration of longer term factors which might impact on company performance, including questions of sustainability or environmental and social impact.[1]

1.2 One of Professor Kay’s recommendations was that the Law Commission should review the legal concept of “fiduciary duty” to address uncertainties and misunderstandings on this issue.

1.3 In March 2013, the Government asked the Law Commission to examine the fiduciary duties of investment intermediaries. A central concern was the legal duties of pension trustees when they make investment decisions. In particular, how far may (or must) trustees consider interests beyond the maximisation of financial return, such as questions of environmental and social impact, and the ethical views of their beneficiaries?

1.4 This short document summarises the Law Commission’s conclusions on these issues. For a full statement, readers are directed to the Law Commission’s final Report, in particular Chapter 6.[2] The Report follows a Consultation Paper, published in October 2013.[3]

DUTIES OF PENSION TRUSTEES

1.5 The legal duties of pension trustees derive from at least three sources.

The trust deed

1.6 The starting point is the trust deed. Looking at the deed, trustees should ask: what is the purpose of the investment power we have been given, and how can we use that power to promote the purpose of the trust?

[1] J Kay, *The Kay Review of UK Equity Markets and Long-Term Decision Making: Final Report* (July 2012) para 9.20.

[2] Fiduciary Duties of Investment Intermediaries (2014) Law Com No 350. This is available at http://lawcommission.justice.gov.uk/areas/fiduciary_duties.htm.The Report was laid before Parliament on 30 June 2014 and published on 1 July 2014.

[3] Fiduciary Duties of Investment Intermediaries (2013) Law Commission Consultation Paper No 215.

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