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Client to profession: A question

Mike Clark

4 June 2015

A question from one of the profession's clients

"Our pension fund has had a responsible investment policy in place for several years.

We believe our portfolio is more resilient to some future risks (especially environmental) than the average UK pension fund.

So, how might your actuarial valuation of our pension fund reflect that, and give us a financial benefit?"

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Unburnable Carbon & Stranded Assets

Mark Campanale
Founder & Executive Director

Carbon Tracker Initiative

08 June 2015

Who Are We?

Carbon Tracker

Identity	Carbon Tracker is a non profit financial think tank.
Mission	To enable a climate secure global energy market by aligning the capital markets with climate reality.
Strategy	To provide the financial and regulatory analysis to ensure that the risk premium associated with fossil fuels is correctly priced.
How	Mapping the transition for the fossil fuel industry to stay within a two degree budget.

- Empower **investors** to identify and switch off capital to the highest cost, highest carbon projects.
- Engage with companies to re-assess both the viability of such projects and of their business model.
- Educate mainstream financial markets and policy-makers over the risk of a disorderly transition.
- Work with financial regulators to bring transparency on climate and stranded asset risk and the fossil fuel risk premium.

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Creating a new financial lexicon

"Carbon Tracker reframed the climate debate by revealing the extent of misalignment between global financial markets and climate security."

Guardian Sustainable Business Awards, Innovative Communications 2014 and 2015

Unburnable Carbon	Fossil fuel energy sources which cannot be burnt if the world is to adhere to a given carbon budget.
Stranded Assets	Energy resources which, at some time prior to the end of their economic life, are no longer able to earn an economic return as a result of changes in the market and regulatory environment associated with the transition to a low-carbon economy.
Wasted Capex	High cost capital expenditures fossil fuel projects are usually the most carbon-intensive ones and require high break-even prices to profitable. They can potentially become wasted capital in a demand and carbon constrained world.
Fossil Fuel Risk Premium	Additional factor which needs to be integrated into analysis of high-cost high-risk fossil fuel assets to ensure climate risk is priced properly, and capital is allocated to align with the transition to a low carbon future.

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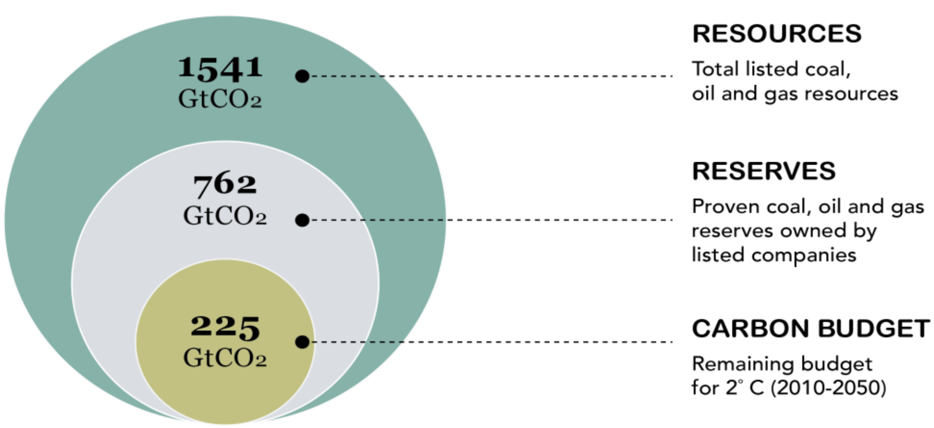
What is the Carbon Bubble?



Carbon Tracker has 'allocated' to the listed fossil fuel companies a Carbon Budget to 2050 with 80% likelihood of staying below the 2°C threshold. Such carbon Budget could be broken in few decades.

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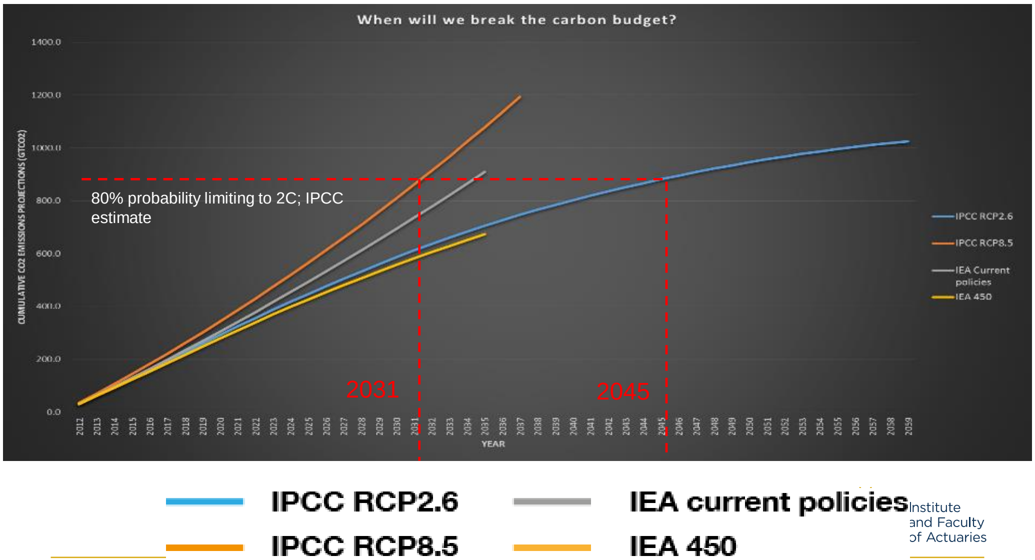
2°C Budget: broken in just few decades?



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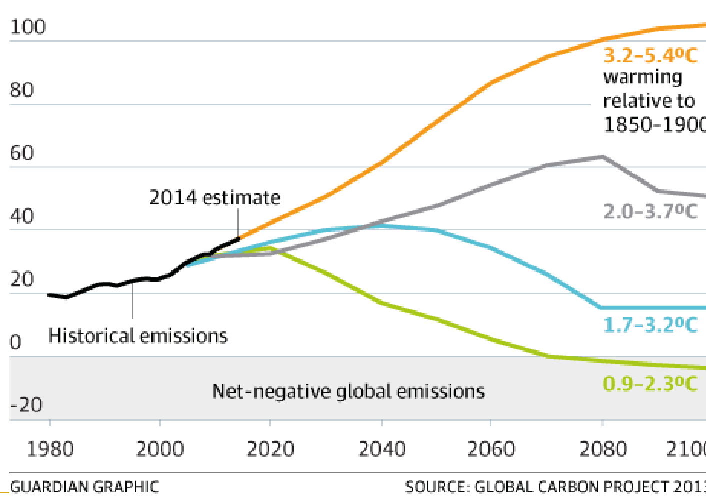
Course of global emissions: 4 Scenarios

Future scenarios for CO2 emissions, Gigatonnes/year



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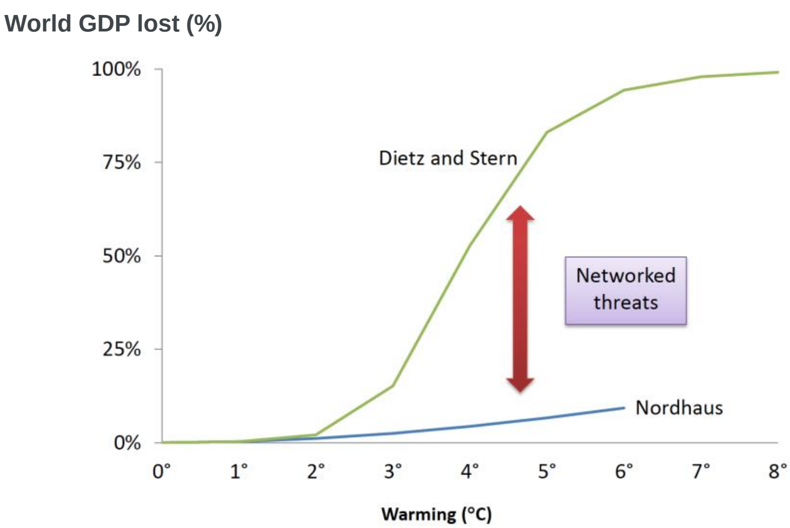
Climate Damage is Deeply Uncertain



Source: Howard Covington, Raj Thamotheram, 2015

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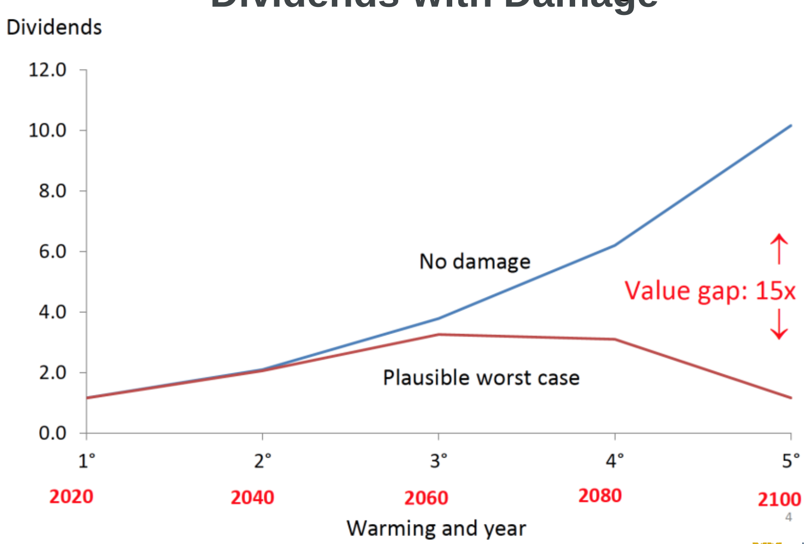
Dividends with Damage



Source: Howard Covington, Raj Thamotheram, 2015

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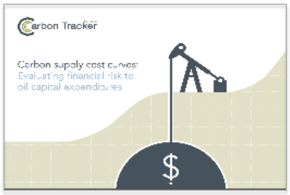
Carbon Supply Cost Curves: Oil



Oil report, May 2014

Oil Majors, Oil Sands, August 2014

- Half of future global developments (2015-2050) have breakeven prices of $60/bbl Brent or over.
- A focus on capital intensive, high cost projects has depressed returns and stock ratings.
- A BAU model (2015-2025) could put an estimated $1 trillion of capex earmarked for high projects (**deepwater, Arctic, Oil sands** and other unconventionals) at risk.
- Investors in Canadian oil sands are at risk of companies wasting $271 billion of capital on projects in the next decade that need prices of over $9/bbl 5 a barrel to give a decent return.

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All reports are downloadable at www.carbontracker.org

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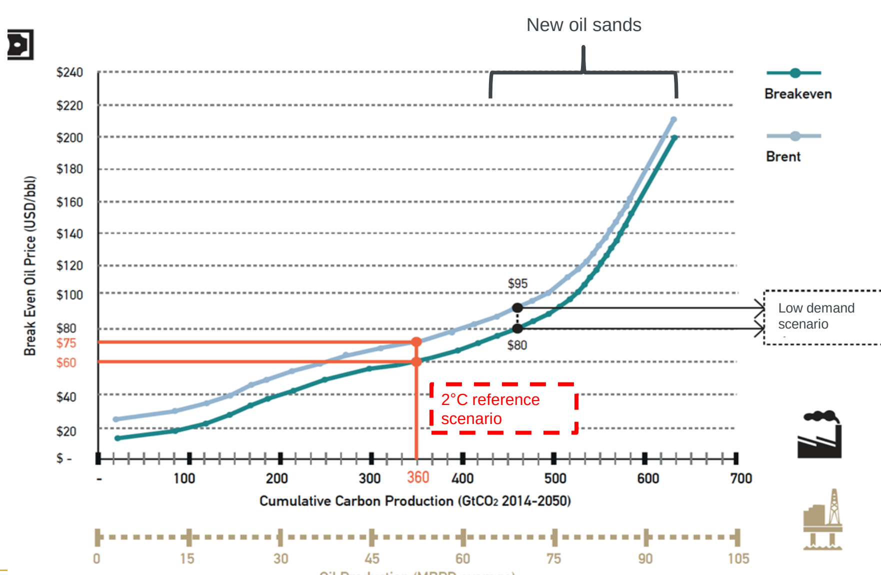
Carbon Supply Cost Curves: Oil



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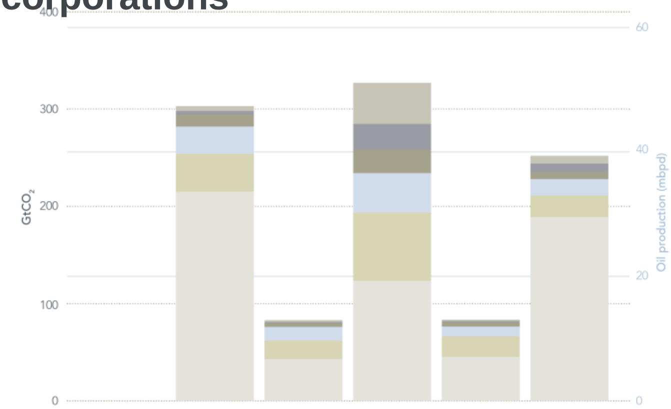
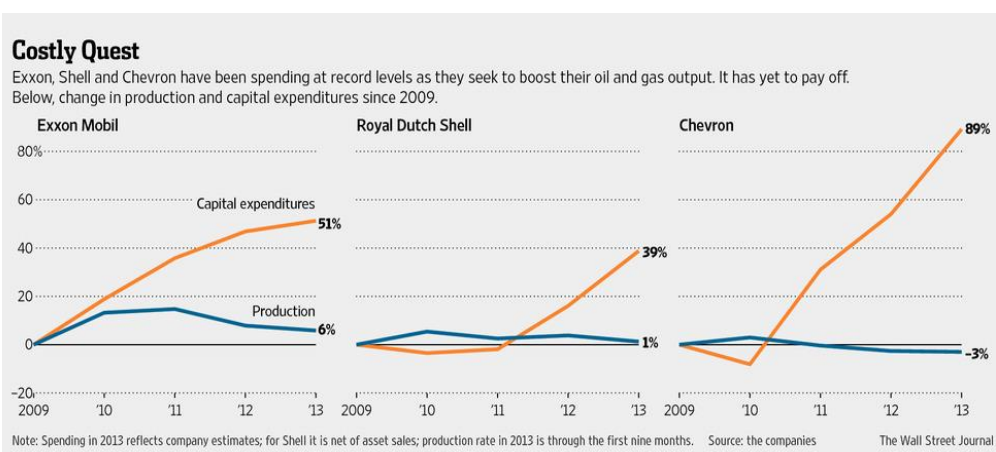
High-cost projects owned by private listed corporations



	NOCs	Part-listed	Private	Majors	OPEC
Above $150	5	2	42	1	8
$120–150	4	1	27	2	9
$100–120	12	4	24	4	7
$80–100	28	14	42	10	17
$60–80	39	19	70	21	22
$0–60	215	43	125	46	189

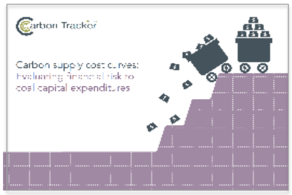
Highest proportion of projects requiring above $80/barrel are owned by listed corporations

Growing capex, falling production



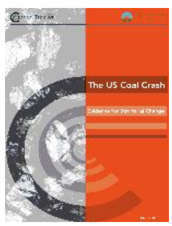
Wall Street Journal, Jan 2014

Carbon Supply Cost Curves: Coal



Coal report,
September 2014

China Coal Cap,
July 2014



US Coal Crash,
March 2015

- $112bn of future capex in potential thermal coal production (excluding China) is at risk of becoming stranded.
- Future demand and price levels may not meet current industry expectations due to greater energy efficiency, cheaper alternatives and new pollution regulations.
- Peak thermal coal demand in China could be imminent. OECD demand is already falling. The resulting oversupply could flood the market, further weakening prices and asset values.
- Deploying additional capital expenditure into high cost production is risky, especially for new mines, which typically require expensive new rail infrastructure and port facilities to get coal to market.

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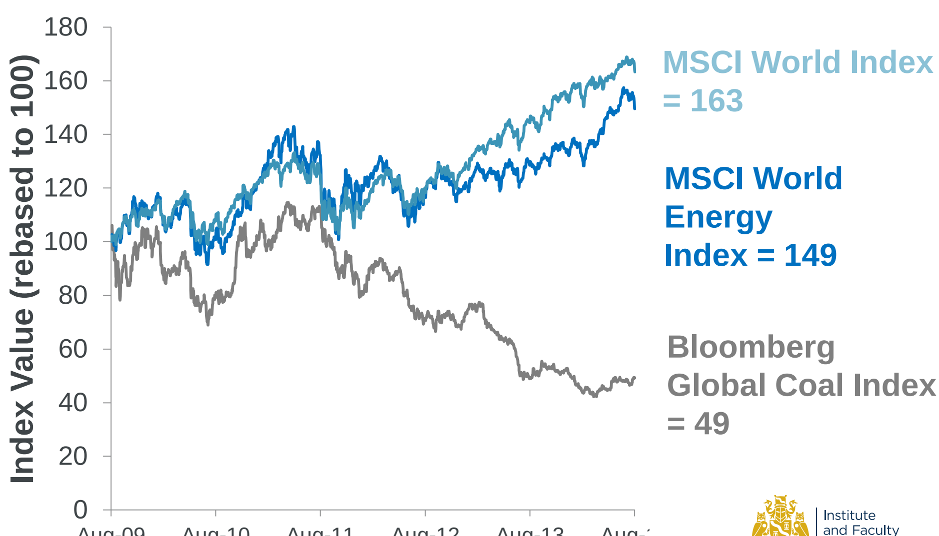
Coal equities down 50% over last five years



Note: Bloomberg Global Coal Index encompasses 32 large coal producers. Source: Bloomberg LP, CTI/ETA analysis 2014

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What's the significance for investors? First, some history…

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1890 : The first Dow Jones Industrial Index

Dow Jones Industrial

- Central Pacific Railroad
- Delaware & Western Railroad
- Northern Pacific Railway
- Central Railroad of New Jersey
- Lake Shore Railway
- Pacific Mail Steamship
- Chicago & St. Paul Railroad
- Louisville & Nashville Railroad
- Union Pacific Railroad
- Chicago & North Western Railway
- Missouri Pacific Railroad
- Western Union
- Delaware & Hudson Canal
- New York Central Railroad

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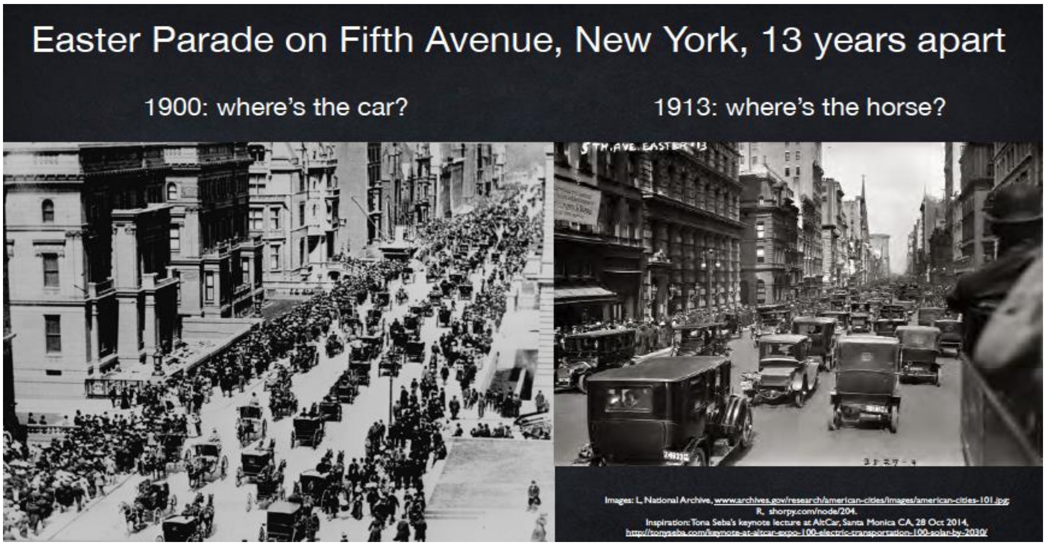

The Model T Ford's nominal price fell 62% in 13 years (1908-21) and the market flipped just as fast. On the New York's Fifth Avenue, in 1900 you have to look for the first car, then, just 13 years later you have to look for the last horse.

Source: Rocky Mountain Institute

40% of Investors money in Rail Stocks…

1914 : Railways' free Index…

Dow Jones Industrial

- American Car and Foundry
- Amalgamated Copper
- Central Leather
- Peoples Gas
- General Electric Company
- U.S. Rubber
- American Smelting & Refining
- General Motors Corporation *
- U.S. Steel
- American Sugar
- National Lead
- U.S. Steel (Preferred)

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Carbon Tracker's analyses have demonstrated the financial relevance to investors

Investors are more able and willing to engage. For example:

- AP4 announcing it will decarbonise its portfolio & AP2 excluding 20 companies
- Storebrand selling companies with the highest exposure to coal and oil sands
- Church of England selling out of coal and oil sands
- The Norwegian Sovereign Wealth Fund reviewing its fossil fuel holdings (final decision June 5th)
- Axa announcing to sell off 500 million of coal assets

Effective engagement is critical to ensure the energy transition is being internalised by the fossil fuel sector.

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Shareholder Resolutions

BP and Shell

150 major investors called on Shell and BP to disclose on climate risks

- Stress test business models against 2C world
- Disclose how public policy align with climate mitigation
- Commit to reduce emissions and back renewables
- **AGM vote equals 98% support**

In the US, climate change resolutions are being taken to ExxonMobil and Chevron in light of **'structural challenges facing the industry'**

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Carbon Tracker's Blueprint Series

Benchmarking energy transition progress

Allows investors to track the effectiveness of their engagement.

Fossil fuel companies' risk assessments should:

- Look at demand pathways that differ from BAU;
- Planning assumptions include expectations of price futures;
- Include IRRs and breakeven prices for future project portfolio

CTI Report: 'The Fossil Fuel Transition Blueprint', April, 2015

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Action Points for Investors

1. Understand and **manage risk exposure** of portfolio to the upper end of the curves.
2. Focus **engagement** on projects requiring **breakeven price** above those Identified.
3. Require improved **disclosure of demand and price assumptions**.
4. **Support transparency** of company exposure to the cost curves and impairment trigger points.
5. Ensure **remuneration policies** at companies are consistent with shareholder returns objectives.
6. Make it known to companies that you are seeking **value not volume**.
7. Set **thresholds for exposure** to high cost and high risk projects.
8. **Identify companies** with majority of capex in high cost projects.

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Where would you invest your money?

OR

Investors still bear scars from the failure of big, old, strong companies that didn't survive the IT transition. But they got rewarded by those that did.

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Where would you invest your money?

OR

Which of the great companies on the left will be brave enough to make the jump and join the firms on the right?

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Thank you.

Mark Campanale

Founder and Executive Director,
Carbon Tracker Initiative

www.carbontracker.org
@carbonbubble

Carbon Tracker Initiative

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It's not just about the (stranded) assets

Simon Jones

4 June 2015

The context

Natural Environment **Real Economy** **Financial Economy**

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Investor responses

Divest	• Remove exposure to potentially compromised investments • Strong lobby from organisations such as 350.org • Focus only on equities?
Tilt	• Ex-fossil fuels indices offers an option for passive investors • Can bias portfolios positively
Engage	• Asset ownership conveys responsibilities on investors • Engagement can influence corporate behaviour • Will we see more active investors in future?

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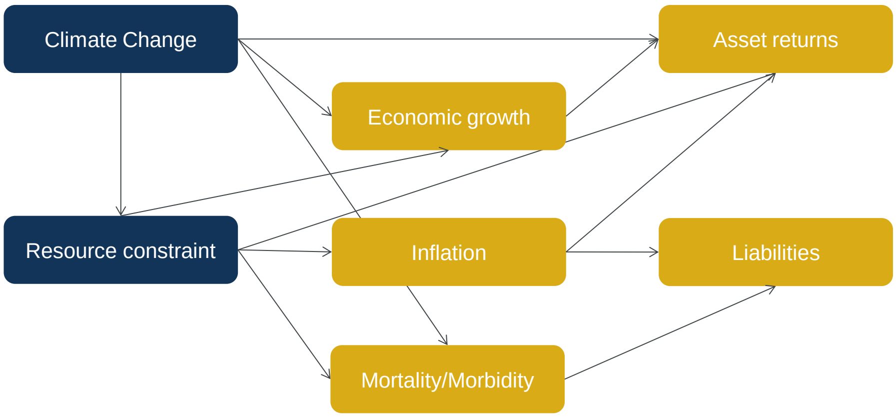
The bigger picture



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Where do we go from here?

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Questions

Comments

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

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A ramble through the potentially stranded countryside

Mike Clark

4 June 2015

Today's narrative

- What are clients saying?
- Stranded Assets – what, how, why?
- Savings and Investments - any stranding here?
- What's going on out there?
- Fiduciary duty – potentially misunderstood?
- So, who's doing what?
- What's your role in all this?

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Stranded Assets

- Stranded assets are assets that **have suffered from unanticipated or premature write-downs, devaluations, or conversion to liabilities** [1]
- Risks arise from:
  - Environmental challenges
  - Changing resource landscapes
  - New government regulations
  - Falling clean technology costs
  - Litigation (e.g. carbon liability) and changing statutory interpretations
  - Evolving social norms

1 Smith School

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It's a widely recognised issue

"If that happened [*faster transition to low carbon economy*], fossil fuel reserves would indeed be stranded. Investors beware: the risk of that cannot be zero" Martin Wolf, FT, 17 June 2014

"The majority of proven coal, oil and gas reserves may be considered unburnable if global temperature increases are to be limited to 2 deg Celsius" Mark Carney, Governor, Bank of England, Autumn 2014

"…failure of the financial system to take adequate account of climate change could result in extensive damage to financial assets globally, and may well threaten the stability of the financial system itself."

The Coming Financial Climate, May 2015
from the UNEP Inquiry: *Design of a Sustainable Financial System*

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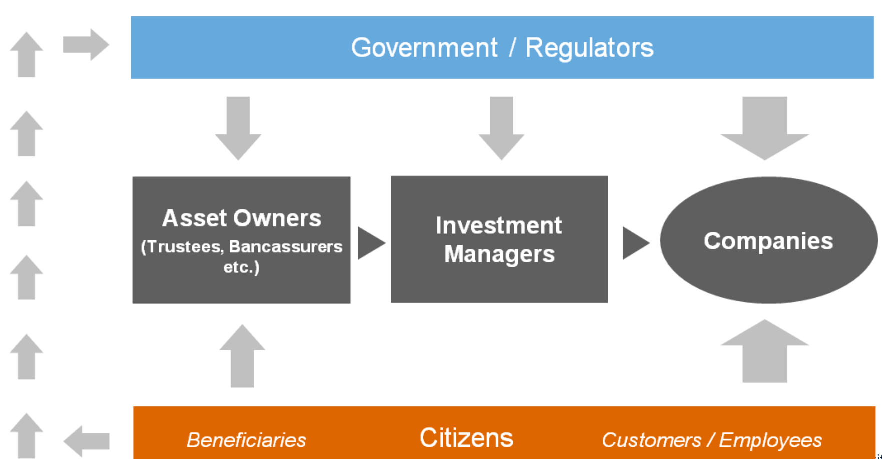
The investment countryside
Any stranding here?



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What's going on out there?
Initiatives helping us to move along

- United Nations Principles for Responsible Investment (2006)
  - $45trn AUM and 1200+ signatories
  - Signatory Transparency Reports on PRI website
  - IFoA to become signatory?
- Montreal Carbon Pledge (2014)
  - Signatories will measure and report their carbon footprint
  - 45 signatories (May 2015)
- Portfolio Decarbonisation Coalition
- UN COP21 (Paris) in late-2015 (Kyoto…Copenhagen…)

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Fiduciary Duty

- The Megarry Judgment – probably past its sell-by date
- Law Commission (2014), following the Kay Review
  - If ESG factors are financial, then why not consider?!
  - And if the members would support wider aims…
  - DWP consultation on Investment Regulations: SIP
- Freshfields Report
  - Fiduciary II
  - Update under way
- Duty of Alignment and Duty of Care – good guides?

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So who's doing what?

- Asset owners are developing (wider) investment beliefs
- ESG data providers – with carbon specialists
- Low carbon indices
- BP and Shell Shareholder Resolutions – result!
- Sustainable Stock Exchanges initiative
- Climate Bonds Initiative – green bonds
- Carbon pricing: EU ETS, Quebec & California, China
- Low carbon investment management mandates

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Anything else?

- Accounting for Sustainability (A4S)
- IIGCC – International Investor Group for Climate Change
- ShareAction – Green Light Campaign
- Climate and Pensions Legal Initiative (AODP and ClientEarth)
- IPCC (2014), Fifth Assessment Report
- Smith School Stranded Assets Programme
  - Research: "Are Investment Consultants a barrier to green investment?"

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Closer to home…

- Resource and Environment Board newsletter – sign up!

- Working Party: **Accessing illiquidity in the DC market**

  How to bring DC savers and illiquid investments together? Why is nearly all DC saving in liquid, daily tradable asset classes? Society needs e.g. infrastructure, which is often illiquid. What barriers exist, how might they be overcome? The DC advisory committee of the Pensions Board together with the F&I and R&E Boards are establishing a working party to consider this, and associated issues. Interested?

What's your role in this?

??

Questions

Comments

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

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UN Principles for Responsible Investment

1. We will incorporate ESG issues into investment analysis and decision-making processes
2. We will be active owners and incorporate ESG issues into our ownership policies and practices
3. We will seek appropriate disclosure by the entities in which we invest.
4. We will promote acceptance and implementation of the Principles within the investment industry
5. We will work together to enhance our effectiveness in implementing the Principles
6. We will each report on our activities and progress towards implementing the Principles

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Resources and references

- United Nations Principles for Responsible Investment
- Montreal Carbon Pledge
- Portfolio Decarbonisation Coalition
- Law Commission – Fiduciary Duties of Investment Intermediaries
- University of Oxford Smith School Stranded Assets Programme
- Climate and Pensions Legal Initiative

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And a few more

- CalPERS Investment Beliefs
- BP AGM resolution (Guardian)
- Climate Bonds Initiative
- Carbon Tracker
- PRI Climate Change Strategy Project (Executive Summary)

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Questions Comments

Text or tweet your questions to the chair:

+44 (0)79500 81329

#IFoARiskandInv2015

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