Institute
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of Actuaries

# Stranded Assets Networking Event

23 October
Staple Inn Hall, London

17 November 2014

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PROGRAMME

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# Stranded Assets and Environment-related Risks

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## What are stranded assets in the environmental context?

- Unanticipated or premature write-down, devaluation or become liability.
    - Creative destruction
    - Technology and regulation
    - Extreme events
- Confluence of new risks may make some assets more prone to stranding.
    - Significant and accelerating
- Rarely understood or considered in decision making, especially amongst investors.
- Significant benefits associated with managing these risks.


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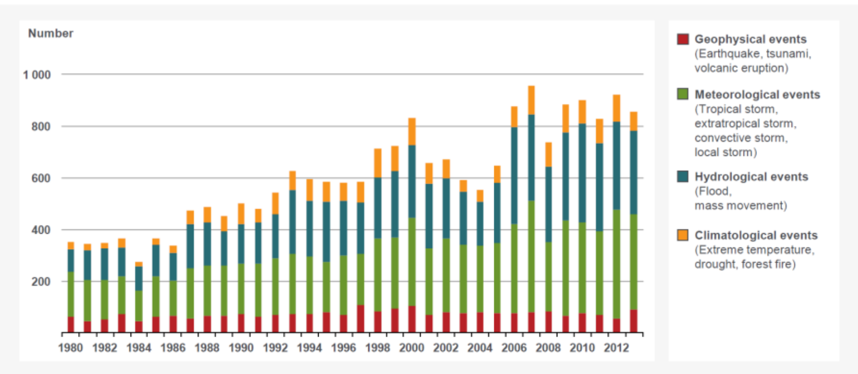
## Climate change

NatCatSERVICE

Loss events worldwide 1980 – 2013

Number of events

Munich RE



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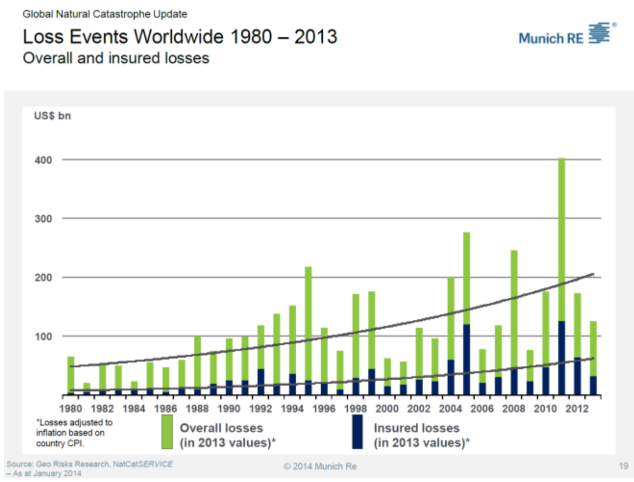
## Climate change

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## Prices and resource availability

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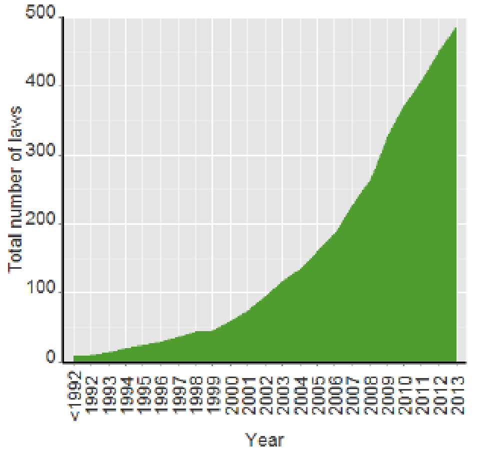
## Government regulations

- Over the past decade climate change regulations globally have increased rapidly.
- According to Globe International, 88% of global CO2 emissions come from 66 countries.
- These countries currently have 487 laws pertaining to climate change, up from <100 in 2002, and <40 in 1997.




Source: Globe International, Globe Climate Legislation Study 4th edition

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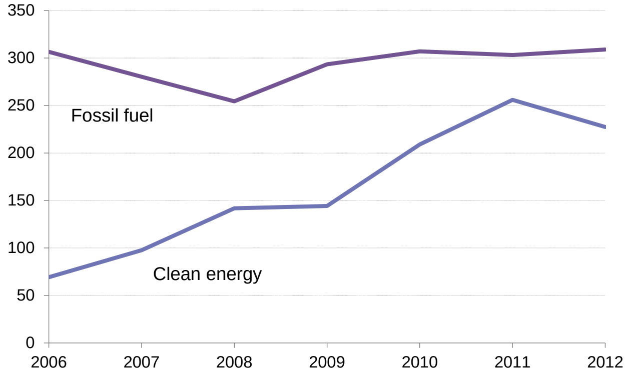
## New technologies – clean vs fossil generation investment (bn $)




Source: Bloomberg New Energy Finance

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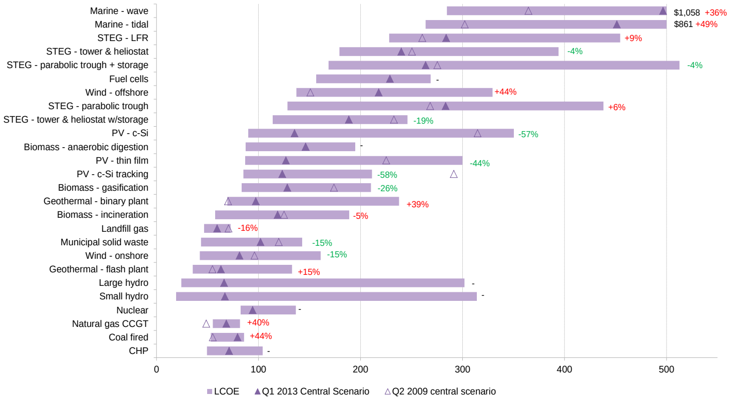
# New technologies – LCOE Q2 2009 vs Q1 2013, per MWh




Source: Bloomberg New Energy Finance

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# New technologies – EU Utility Share Prices


Source: Bloomberg

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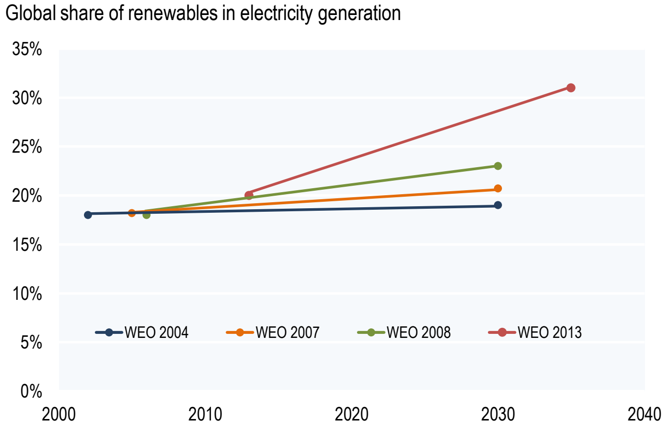
# Technologies move faster than projections




Source: OECD analysis based on projections of IEA World Energy Outlooks in Reference Scenarios of WEO 2004, 2007 and 2008, and New Policies Scenarios in WEO 2013.

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# Why do stranded assets matter?

- **Size of potential VaR and risk at variety of levels, sectors and geographies**
  - e.g. listed and unlisted, equity, debt, sovereign, business models, and development strategies
- **Stranded assets are beginning to have real impacts today**
  - Firms in many sectors have been left with significant asset impairments and write-downs, necessitating changes in strategy
- **Asset stranding is occurring in unexpected and counterintuitive ways in some sectors**
  - Domino effect and correlation
- **Asset stranding may increase the costs of achieving sustainable and resilient economies, for firms, governments, and society**
  - Potential negative impacts on efficient transitions to sustainable business models, the ability of governments to facilitate effective low-carbon transitions, and the stability of the global economy and financial system

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## Stranded assets – A developing literature


**'Unburnable Carbon' – significant attention, what impacts?**

- Implications of "carbon bubble" imposed by climate policy for the value of fossil-fuel industry has inspired debate

**Nuanced perspective? Components of value, sectoral and geographic approaches**

- Acknowledgement of environment-related risks
- Increasing involvement of actors: Banks, Analysts, Universities, IGOs
- Examination of more detailed risk, impact, and response profiles
- Shift beyond equity to examining debt, capex, cost of capital
- Differentiation among assets, projects, products – move to cost-curve approach

**Mixed actions and responses across the investment chain**

- Increasing public awareness and concern in different countries/regional markets
- Development of fossil-fuel divestment campaigns in the US and EU
- Shareholder resolutions, notable divestment actions, pressure for increased performance

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## Criticisms and counter arguments

- *"Short term valuations insulate investors from these long term risks."*
  - **Counter argument**: Some environment-related risk factors are actually quite immediate, with complex relationships emerging.
- *"Markets already appropriately value environmental risks."*
  - **Counter argument**: Vast quantities of evidence show that global financial markets are mispricing or ignoring these risk factors.
- *"This is just the same as creative destruction elsewhere in the economy, why care?"*
  - **Counter argument**: Confluence of related risk factors is significant; drivers, consequences and responses to such stranding are still not understood.
- *"Even if there are stranded assets, markets will have time to readjust."*
  - **Counter argument**: Flexibility depends on time horizons; exits always appear bigger than they actually are and liquidity could be a major problem under certain scenarios.

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## Systemic risk?

- **Levels of exposure across different parts of the financial and economic systems likely to be very significant.**
  - Listed equities are the only area where we currently have ok data.
- **Bank of England tests:**
  - Exposures of financial institutions to carbon-intensive sectors are large relative to overall assets;
  - Impact of policy and technology is not already being priced into the market, either through lower expected returns or higher risk premia;
  - Subsequent correction would not allow financial institutions to adjust their portfolios in an orderly manner.
- **What could central bankers and financial regulators do?**
  - Track exposure; stress testing; macro-prudential tools to deflate exposure.

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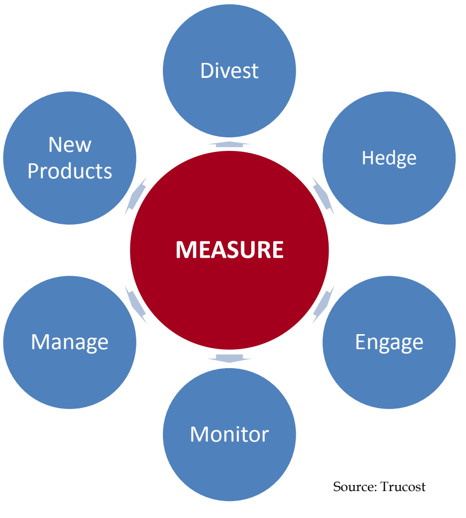
## Managing risk

- Need to understand whether risks are material and when they might be material.
- Monitor, measure, track.
- Scenarios and stress testing.
- Time horizons, sequencing and correlations.
- Quantitative vs qualitative (risk vs uncertainty).
- Embed in credit risk/due diligence processes.




Source: Trucost

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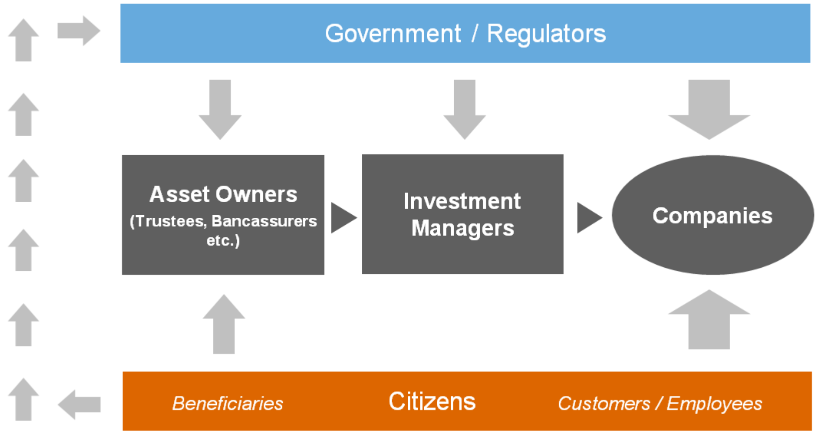
## Application depends where you are in the investment chain




Source: Russell Investments

**Questions**

Comments

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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# Panel Discussion



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## Discussion:

Where might the risks of asset stranding increase, from the actions of governments or others to mitigate climate change, from litigation and/or from investor/consumer concerns?

How should we help our clients to understand and respond to the risk?

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