Anthony Hobley
CEO
The Carbon Tracker Initiative

The World Bank: The Carbon Bubble - Unburnable Fossil Fuels

3rd March 2014

CARBON TRACKER INITIATIVE

Our Mission

Financial experts making carbon investment risk visible in the capital markets today

Our Team

- Anthony Hobley (Chief Executive Officer)
- Mark Campanale (Founder and Executive Director)
- Jon Grayson (Chief Operating Officer)
- James Leaton (Research Director)
- Luke Sussams (Senior Researcher)
- Reid Capalino (Senior Researcher)
- John Wunderlin (Staff Attorney & USA)

- Jeremy Leggett (Chair, Board of Directors)
- Alice Chapple (Director)
- Cary Krosinsky (Director)

Our Partners

Rockefeller Brothers Fund — Philanthropy for an Interdependent World

MAVA — Fondation pour la Nature

The Joseph Rowntree Charitable Trust

Growald Family Fund

Wallace Global Fund

Tellus Mater

The Ashden Trust

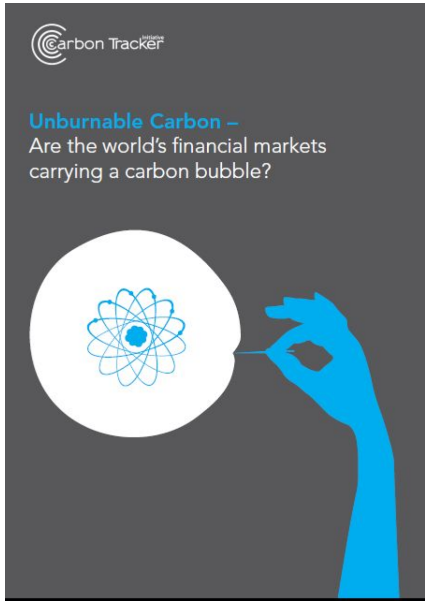
Zennström Philanthropies

Polden-Puckham Charitable Foundation

CARBON TRACKER INITIATIVE: DO THE MATH

Rolling Stone

"…an easy and powerful bit of arithmetical analysis first published by financial analysts in the U.K. has been making the rounds… (it) up-ends most of the conventional political thinking about climate change. And it allows us to understand our precarious position with…. simple numbers". Bill McKibben



350.org

LORD STERN ON UNBURNABLE CARBON 2013

***Unburnable Carbon: Wasted Capital & Stranded Assets*, Carbon Tracker, April 2013**

'This report shows very clearly the gross inconsistency between current valuations of fossil fuel assets and the path governments have committed to take in order to manage the huge risks of climate change'

Professor Lord Stern of Brentford, Chair, Grantham Research Institute on Climate Change and the Environment, London School of Economics

'Wasted capital and stranded assets', made the front page of the Guardian, whilst being featured by most major press titles both in the UK and the US, including The Economist, Financial Times, Telegraph, Forbes, New York Times and Wall Street Journal.

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WHAT DOES THIS ANALYSIS MEAN?

- Markets are based on a 6 degree trajectory
- Investors are tied into the markets
- The markets are not responding to climate policy
- The financial world faces a systemic risk
- Because financial markets have no “visibility” on the three possible outcomes
- *If we are clear on the scenarios there is an opportunity to address both financial & climate risk using financial transparency*

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Only Possible Outcomes: The 3 Scenarios

The three possible outcomes:

1. The Goldilocks Scenario; Policy & regulatory signal in time to allow orderly transition & managed deflation of the carbon bubble
2. The Nightmare Scenario; Global community fails to send policy & regulatory signal, catastrophic warming of 3 to 6 degrees;
3. The Last Minute Scenario; Action delayed until events drive political shift, resulting action swift & severe – carbon bubble bursts resulting in massive financial shock.

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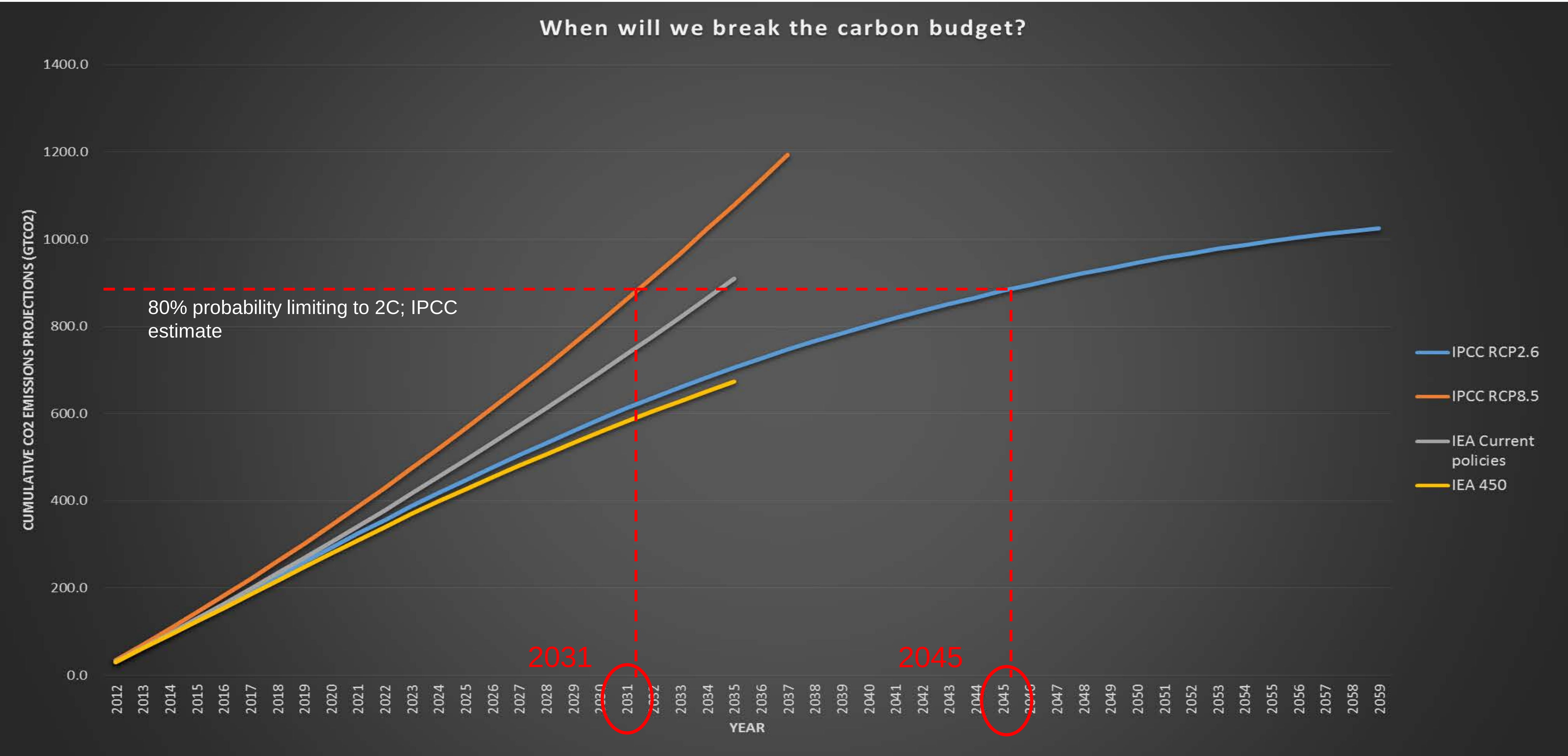
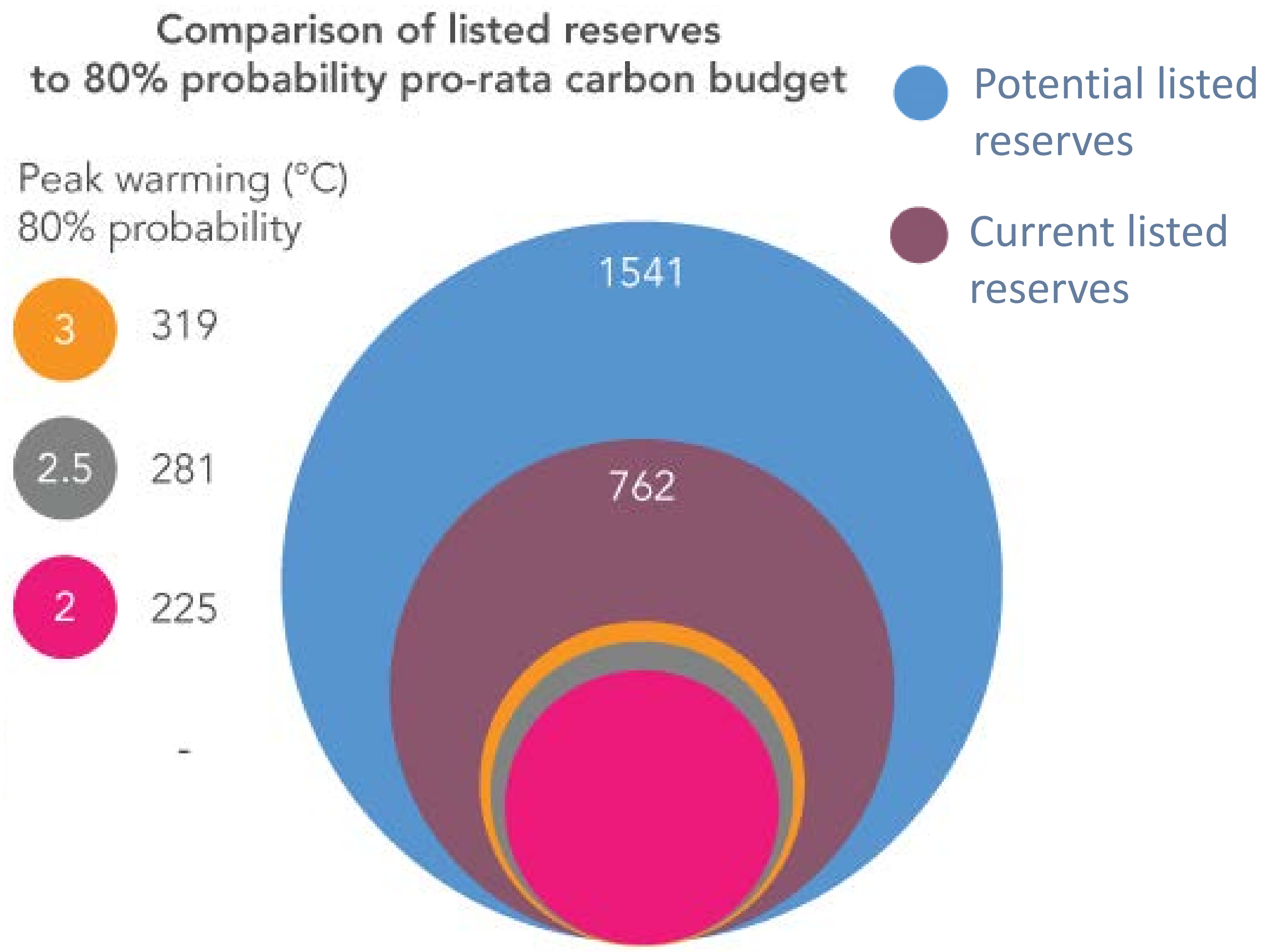
2C BUDGET: BROKEN IN JUST A FEW DECADES?



CARBON BUDGET DEFICIT FOR LISTED COMPANIES.



Listed reserves are a quarter of all known fossil fuel reserves

Current listed reserves ($762GtCO_2$) far exceed a quarter of the total carbon budgets but could double ($1541GtCO_2$)

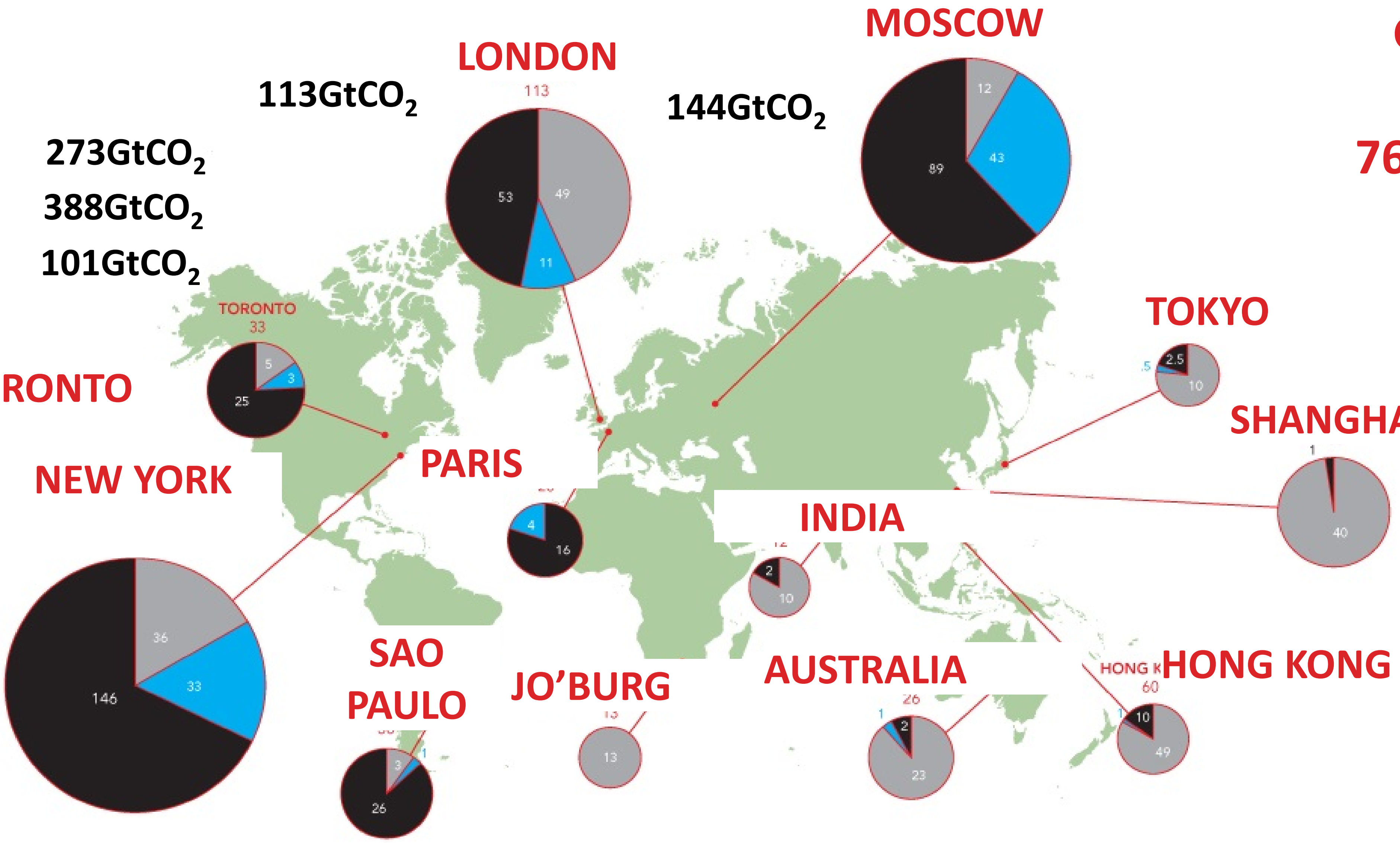
If we break the 2° C budget we very quickly hit 2.5° C and 3° C

CURRENT RESERVES ON STOCK EXCHANGES

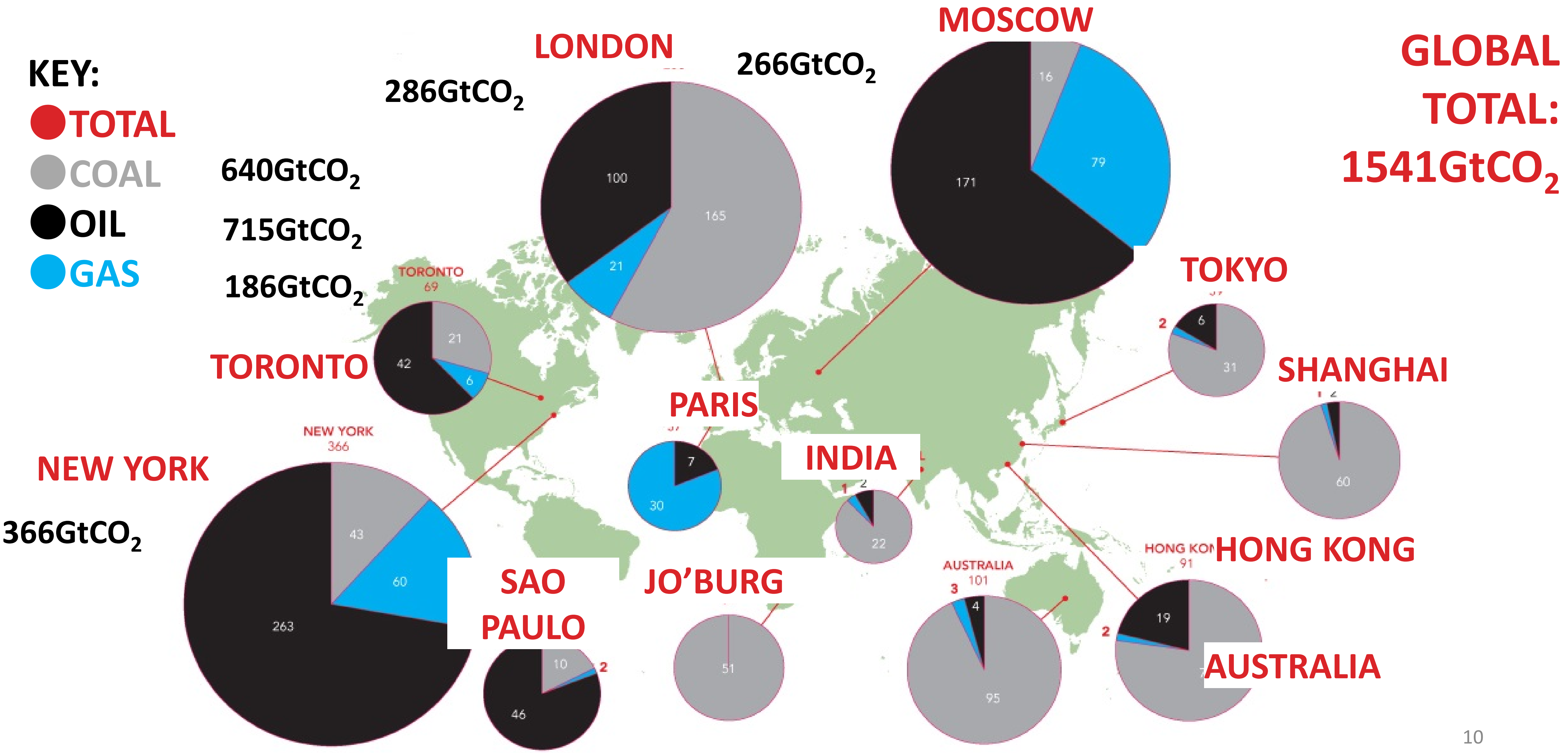
KEY:

- TOTAL
- COAL 273GtCO_2
- OIL 388GtCO_2
- GAS 101GtCO_2

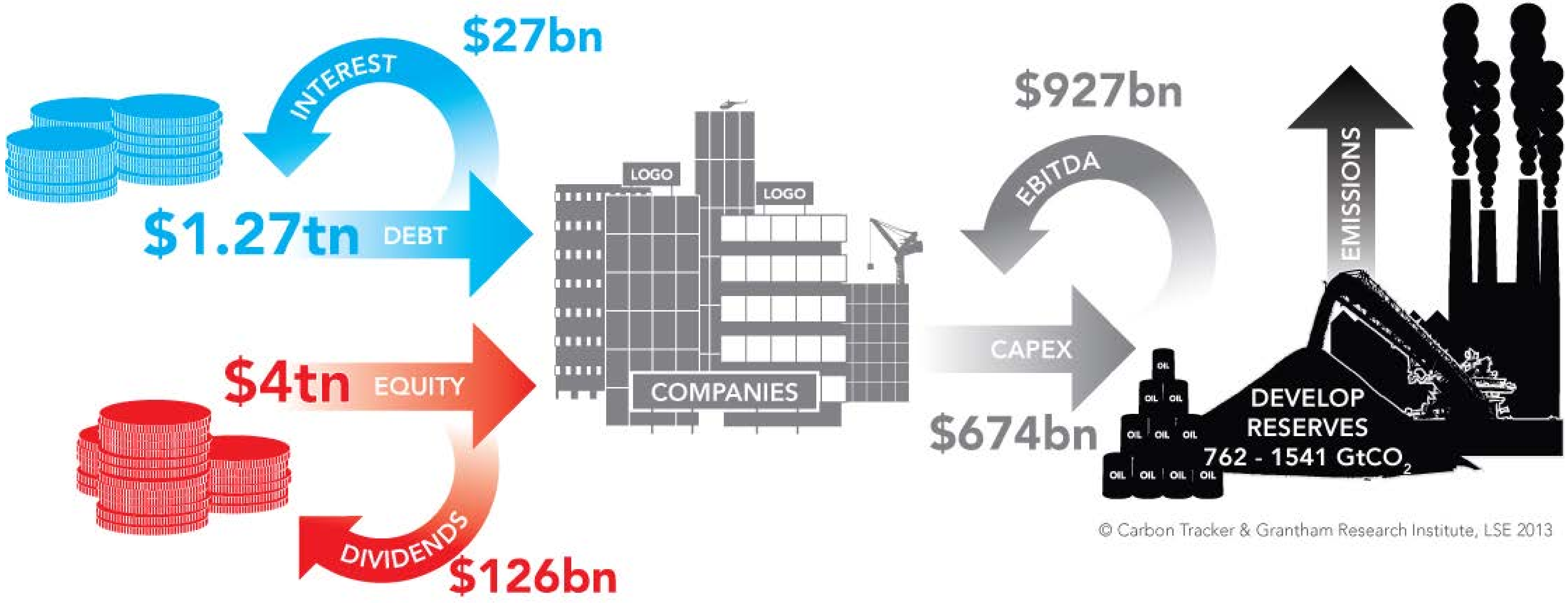
GLOBAL TOTAL: 762GtCO_2



POTENTIAL RESERVES WITH ONGOING CAPEX



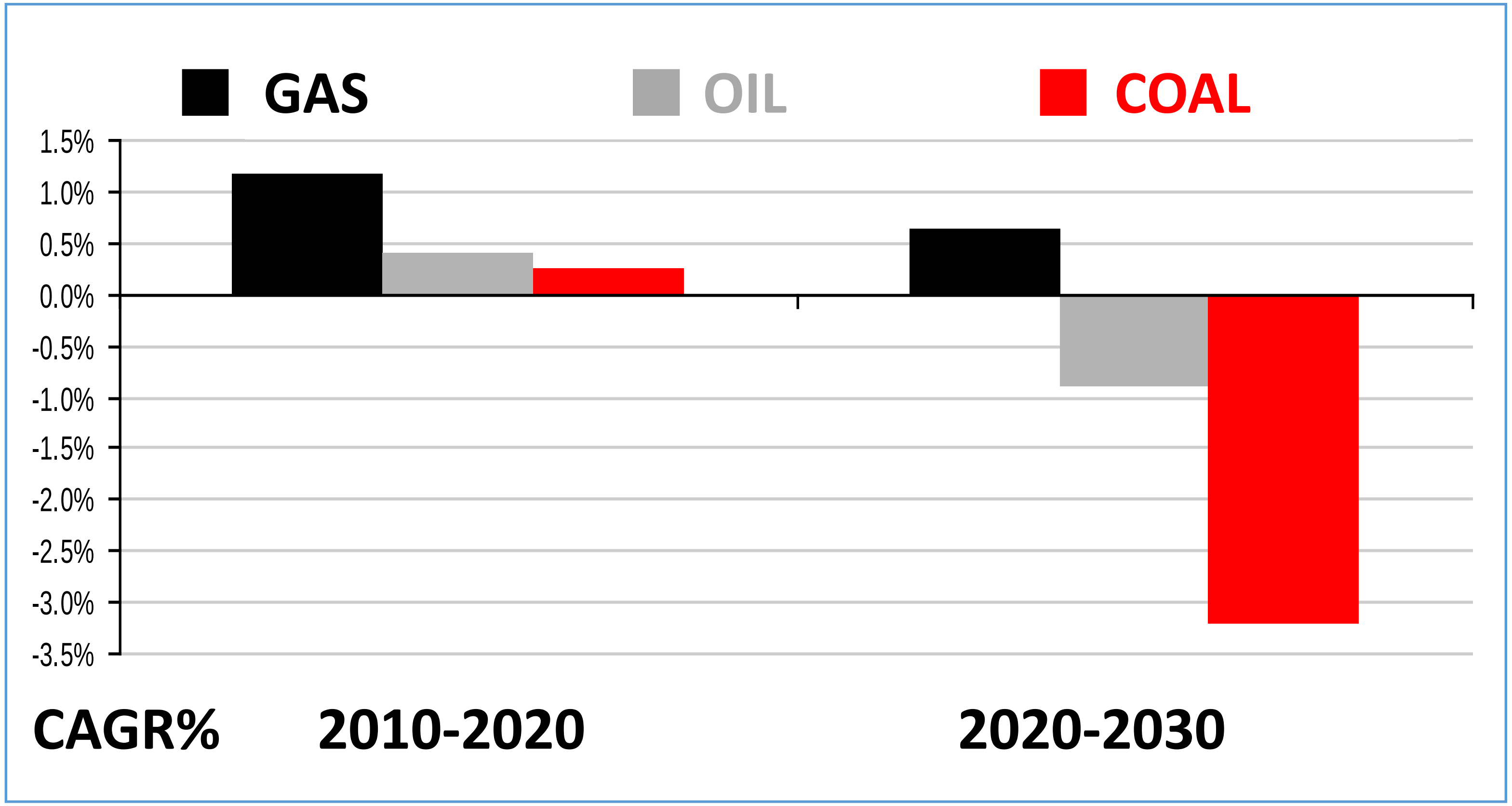
REBALANCING IS NEEDED BETWEEN FLOWS: The Capex Hungry Beast



COAL VERSUS OIL VERSUS GAS

WHAT IS AT MOST RISK OF STRANDING AND WHAT DOES THIS MEAN FOR FOSSIL FUEL ASSET VALUATIONS?

COAL VS OIL VS GAS



- Impact on price?
- Coal most exposed

"***Only 20% of global coal reserves can be developed by 2050 without CCS in the 450 scenario***" (IEA Redrawing the Energy Climate map 2013)

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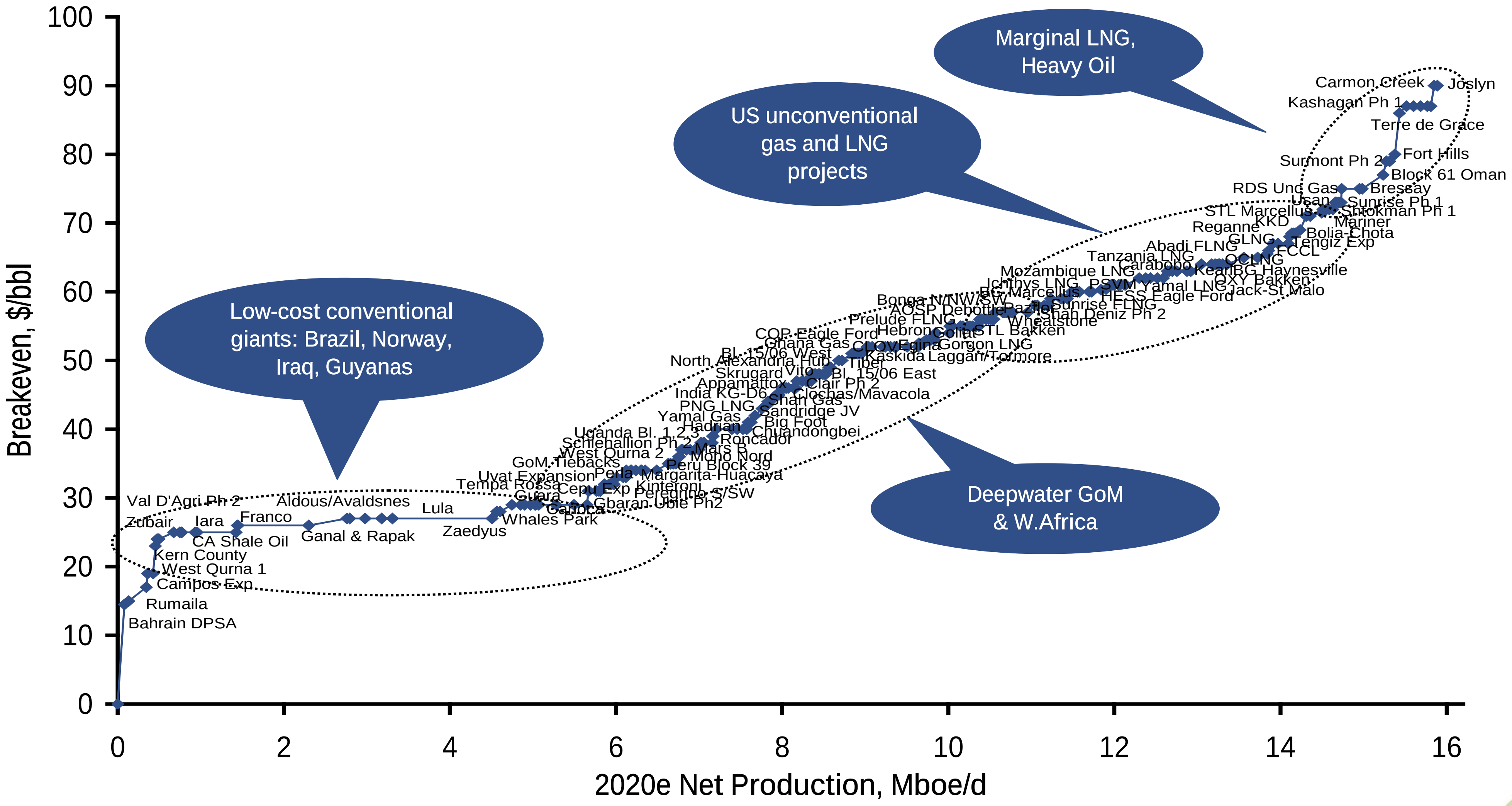
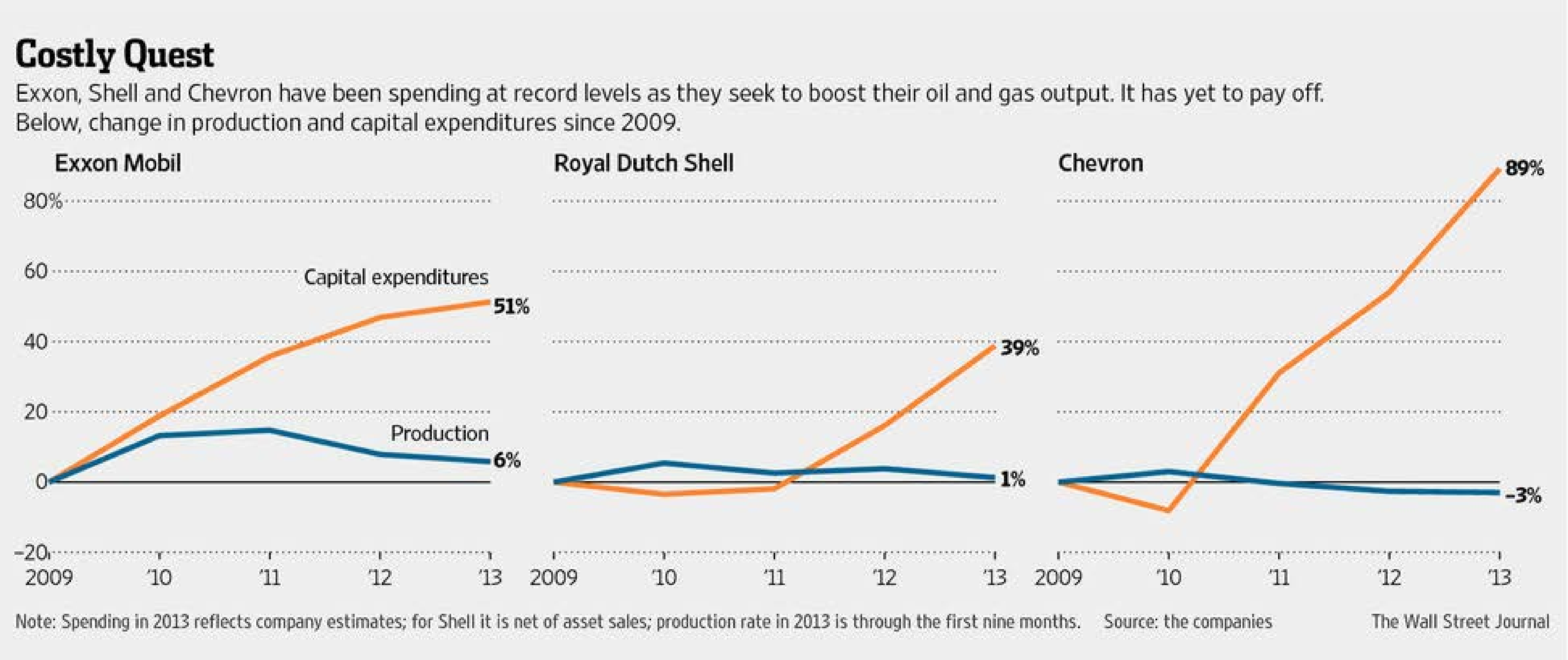
UNCONVENTIONALS TO FALL OFF THE COST CURVE



(Citi: Global Integrated Oil to 2020)

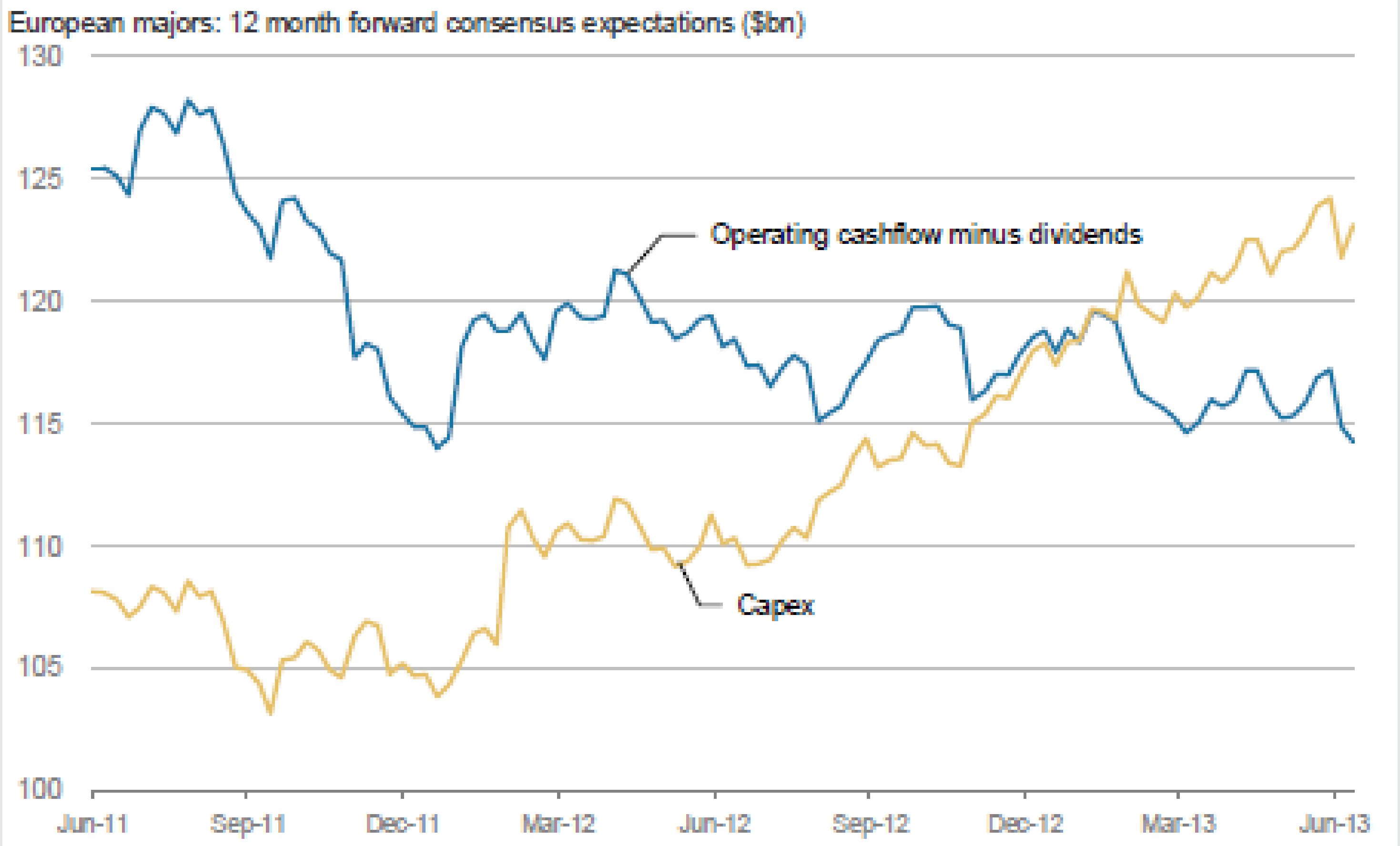
GROWING CAPEX FALLING PRODUCTION



Wall Street Journal, Jan 2014

DO DIVIDENDS AND CAPEX ADD UP?

Capex and operating cash flow projections on diverging trends



Source: IBES, Datastream, Morgan Stanley Research

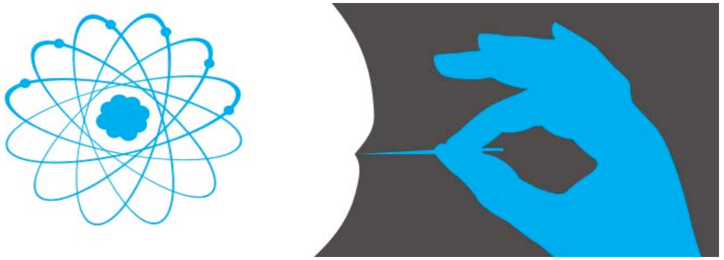
- Oil sector cannot continue to spend more just to maintain production levels.
- E.g. Shell taking a haircut on its oil shale assets.

MANAGEMENT ISSUES: OIL

- Denial
  - “We will see it coming”
  - “It will happen gradually”
- Commercial concerns
  - Risk of backlash from investors for not pursuing value added investments
  - Management have flexibility over capital expenditure
- Shareholder message?
  - Low return projects tend to be at greater risk from tax, costs and price – **sensitivity scenarios please**
  - Growth is over-rated
- **Conclusion? Be more disciplined on capital investment and return to shareholders if necessary**

HSBC

FOSSIL FUELS: NEW BUSINESS MODELS REQUIRED



Paul Spedding, Oil & Gas Sector Analyst,

April 2013

HSBC

"Carbon Tracker's report "*makes it clear that 'business-as-usual' is not a viable option for the fossil fuel industry in the long term.*

Management should already be looking to new business models that reduce the risk of stranded assets destroying shareholder value .

In future, capital allocation should emphasise shareholder returns rather than investing for growth."

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FOSSIL FUEL CREDIT RATINGS AT RISK

STANDARD & POOR'S

RATINGS SERVICES

RatingsDirect®

What A Carbon-Constrained Future Could Mean For Oil Companies' Creditworthiness, 2013

"Financial models that only rely on past performance *and creditworthiness are an insufficient guide for investors."*

Analysis of oilsands operators: *"We note that under a meaningfully lower long-term oil price, the commercial viability of undeveloped reserves and hence the core business model could come into question unless development costs also fall. This could potentially result in a downgrade of more than one notch if we were to place less reliance on undeveloped or probable reserves than at present."*

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UNWINDING THE CARBON BUBBLE
WHAT CAN INVESTORS AND REGULATORS DO?

OPTIONS FOR INVESTORS: $7 TRILLION QUESTION

1. **Review valuation assumptions**
   Commission equity and credit research which considers different future scenarios; what happens if 20% probability that Governments take preventative measures on climate?
2. **Challenge CAPEX plans**
   Question merit of Company Boards of spending shareholder funds to develop high cost high carbon projects
3. **Disclosure Enhancement**
   Listed corporate owners of fossil fuels should disclose embedded CO2 in reserves – *future emissions*
4. **Regulation**
   Address climate change as a systemic risk by collaborating with other investors in challenging financial regulatory framework

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NOT BREACHING 2 DEGREES CEILING MEANS CANCELLING CAPEX AND WITHDRAWING CASH

Engagement with 45 companies on carbon asset risk

- *"Institutional investors must think over the long-term, which means that we must take environmental risks into consideration when we make investments,"* said **New York State Comptroller Thomas P. DiNapoli**
- *"Companies must plan properly for the risk of falling demand by stress-testing new investments to minimize the risk our clients' capital is wasted on non-performing projects."* said **Craig Mackenzie, Head of Sustainability at Scottish Widows Investment Partnership**

SUMMARY OF OUR WORK PROGRAMME

1. Assessing **systemic climate change risk** and the role of capital market regulators in managing financial stability
2. Challenging **valuation assumptions** and debt risk profiles of publically traded owners of fossil fuels
3. Identifying **stranded assets** and looking in depth at high capital expenditure fossil fuel projects
4. Reviewing the **accounting standards** for impaired/stranded/sub-prime assets
5. Investigating the **capital raising** process and how climate risk is factored into IPO's and debt raising
6. Exploring the contradiction between **climate policy** and how capital markets function

Questions

More information:

www.carbontracker.org

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