



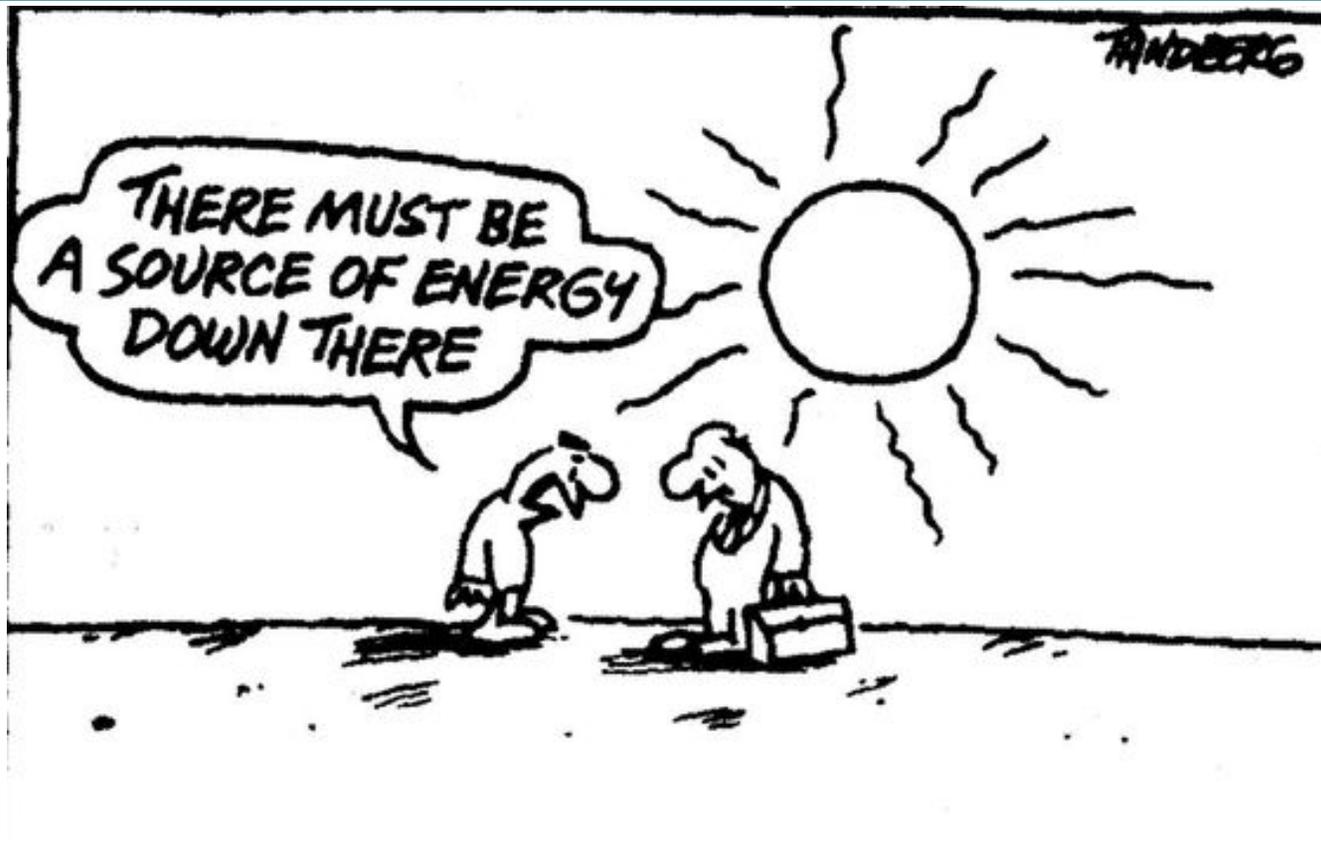
Low carbon energy transition's impact on capital markets

University of Victoria

By
Henrik Jeppesen, CFA
Head of Investor Outreach North America for Carbon Tracker

November 14, 2019

Challenging Business as Usual



Carbon Tracker Initiative – founded in 2011

Identity Carbon Tracker is an independent non-profit financial think tank funded by EU and US foundations interested in climate.

Vision To enable a climate secure global energy market by aligning the capital markets with climate reality.

Mission Mapping the transition for the fossil fuel industry to stay within a 2-degree budget.

Strategy

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 carbon and stranded asset risk and the fossil fuel risk premium.



Key takeaways

- 1 Climate science shows that there are **finite limits** to carbon emissions for any given warming outcome

The carbon budget
- 2 Far more fossil fuel is available than fits within these limits – higher cost assets run greater risk of **destroying value** in the energy transition

Stranded assets
- 3 Falling renewable costs, air pollution and import dependency drives a tipping point for the **Inevitable Policy Response** and an **emerging market leapfrog**

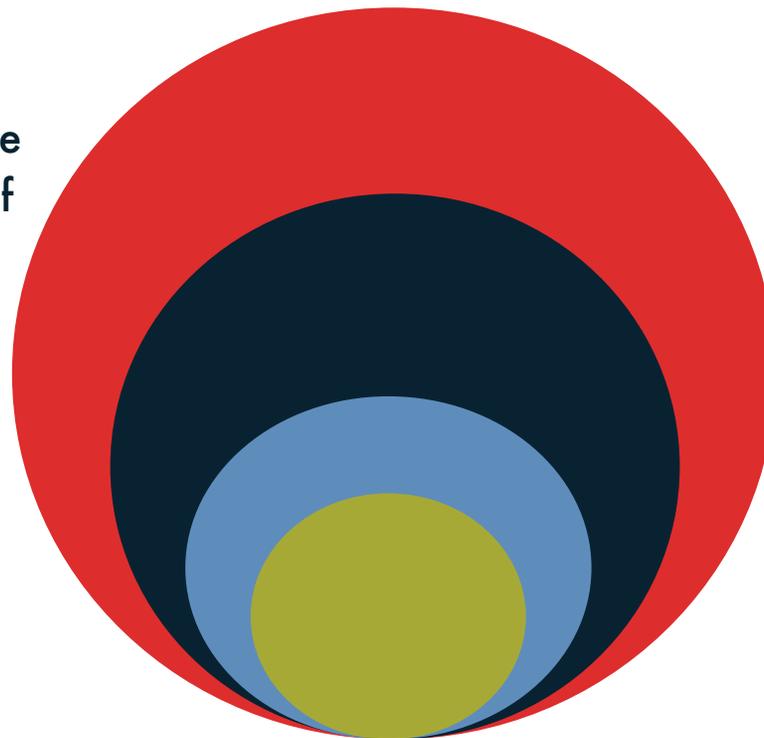
Energy disruption
- 4 Investors lose money at the peak, not when the system has changed. Divestment can **reduce the direct risks** to the portfolio, but the long-term systemic risks remain

Divestment?

We can't burn them all

World risks a carbon bubble => Can't burn it all

60-80% of coal, oil and gas reserves of publicly listed companies are 'unburnable' if the world is to have a chance of not exceeding global warming of 2°C.



CO₂ embedded in the total potential listed coal, oil and gas reserves

1541 GtCO₂

CO₂ embedded in the total current listed coal, oil and gas reserves

762 GtCO₂

Remaining CO₂ budget for 2°C (2010-2050)

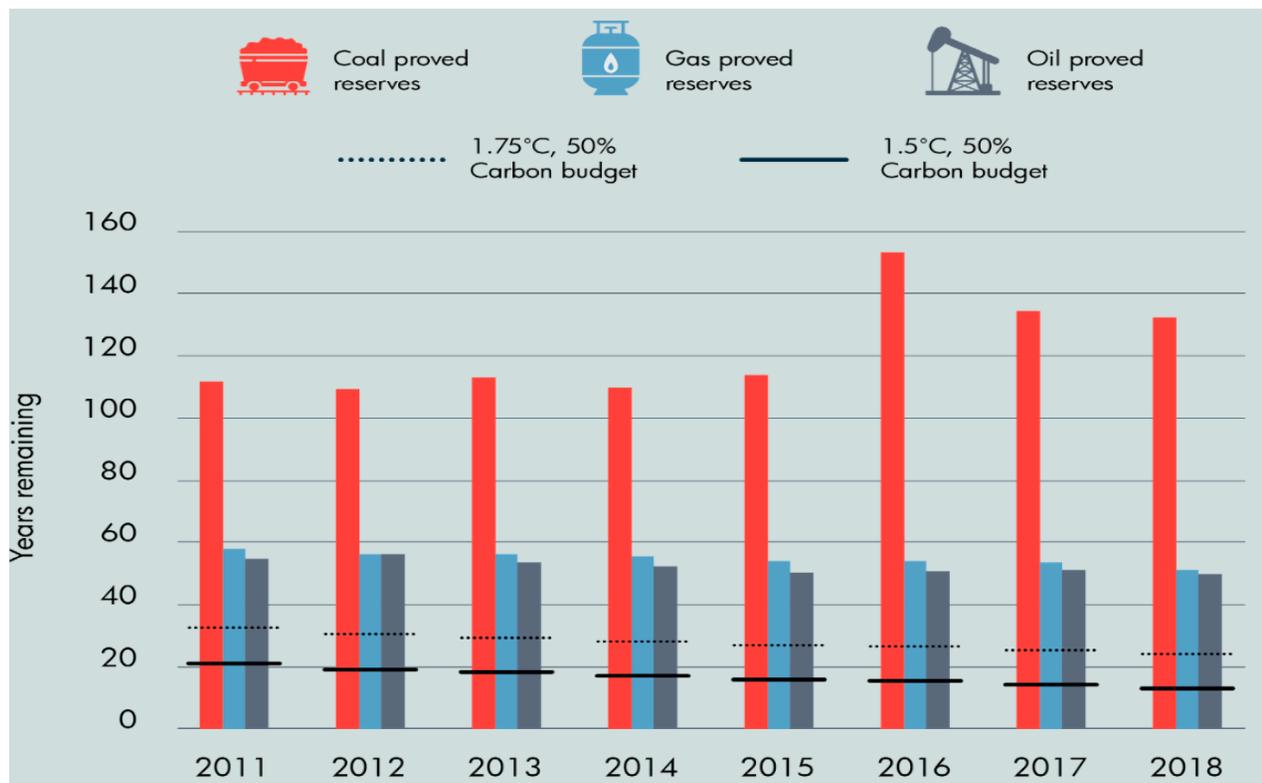
269 GtCO₂

Remaining CO₂ budget for 1.5°C (2010-2050)

131 GtCO₂



The carbon bubble continues to inflate

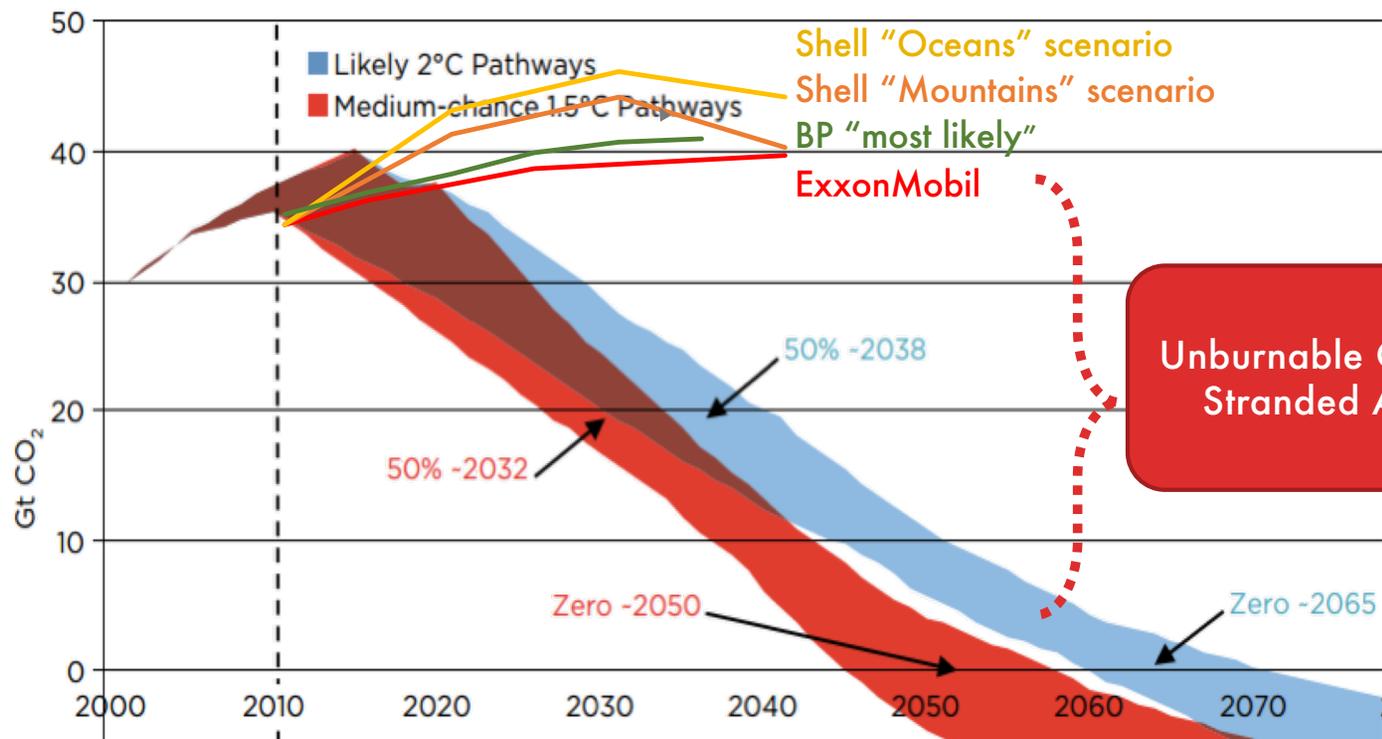


Despite the Paris Agreement and Mark Carney's 'Tragedy of the Horizon' speech, the fossil fuel industry has not diverted from business as usual.

There is an overhang in all fossil fuels, with coal reserves life alone exceeding the remaining "well-below 2°C" budget life by a factor of 7.

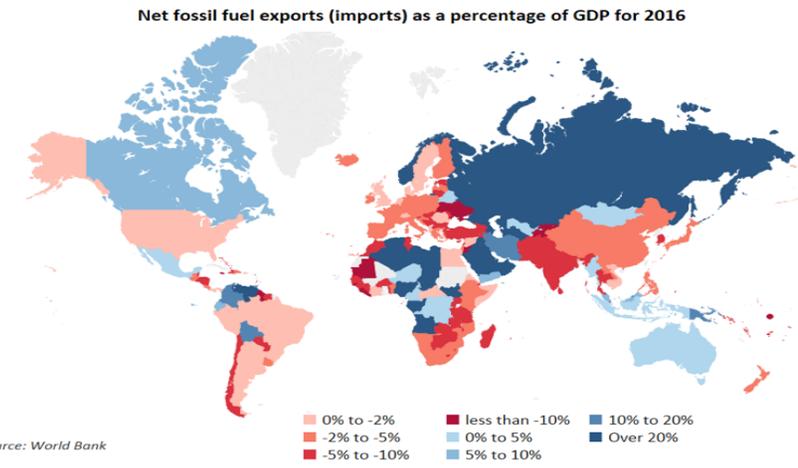
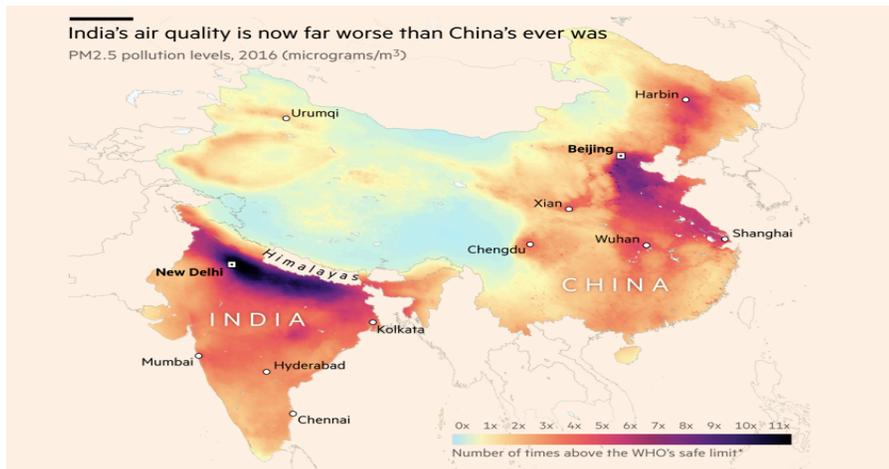
As Fossil Fuels bet against the Paris agreement

Range of IPCC emissions scenarios (from all sources) consistent with Paris goals



Unburnable Carbons Stranded Assets

Air pollution and Import dependency – key drivers



9 of 10 people breathe polluted air, and ambient air pollution kills over 4 million people a year according to WHO.

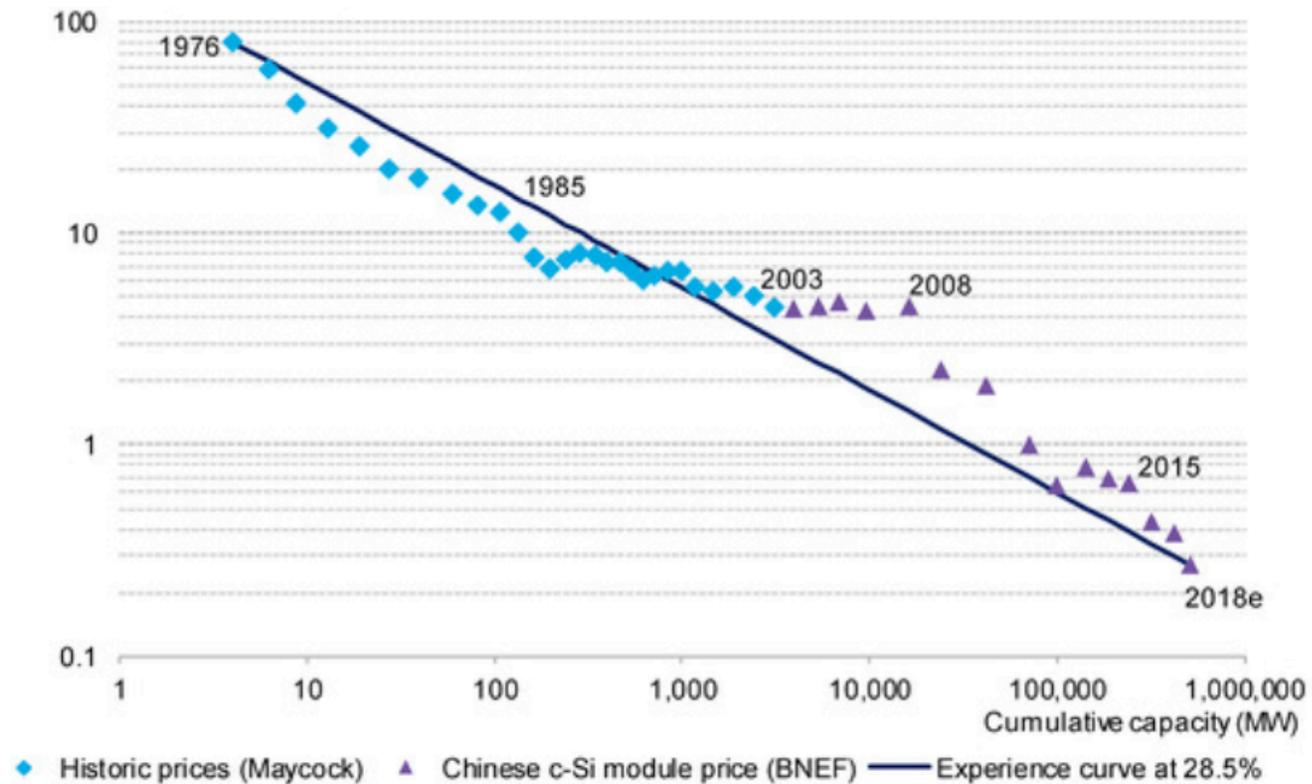
Especially acute in the developing world, where all of the growth in energy demand comes from.

80% live in countries that import fossil fuels (just 5% of the global population is responsible for 75% of all fossil fuel exports).

China and India – together accounts for +50% of the expected increase in energy demand ... expected to import +80% of their oil by 2040.

Solar started a technology revolution

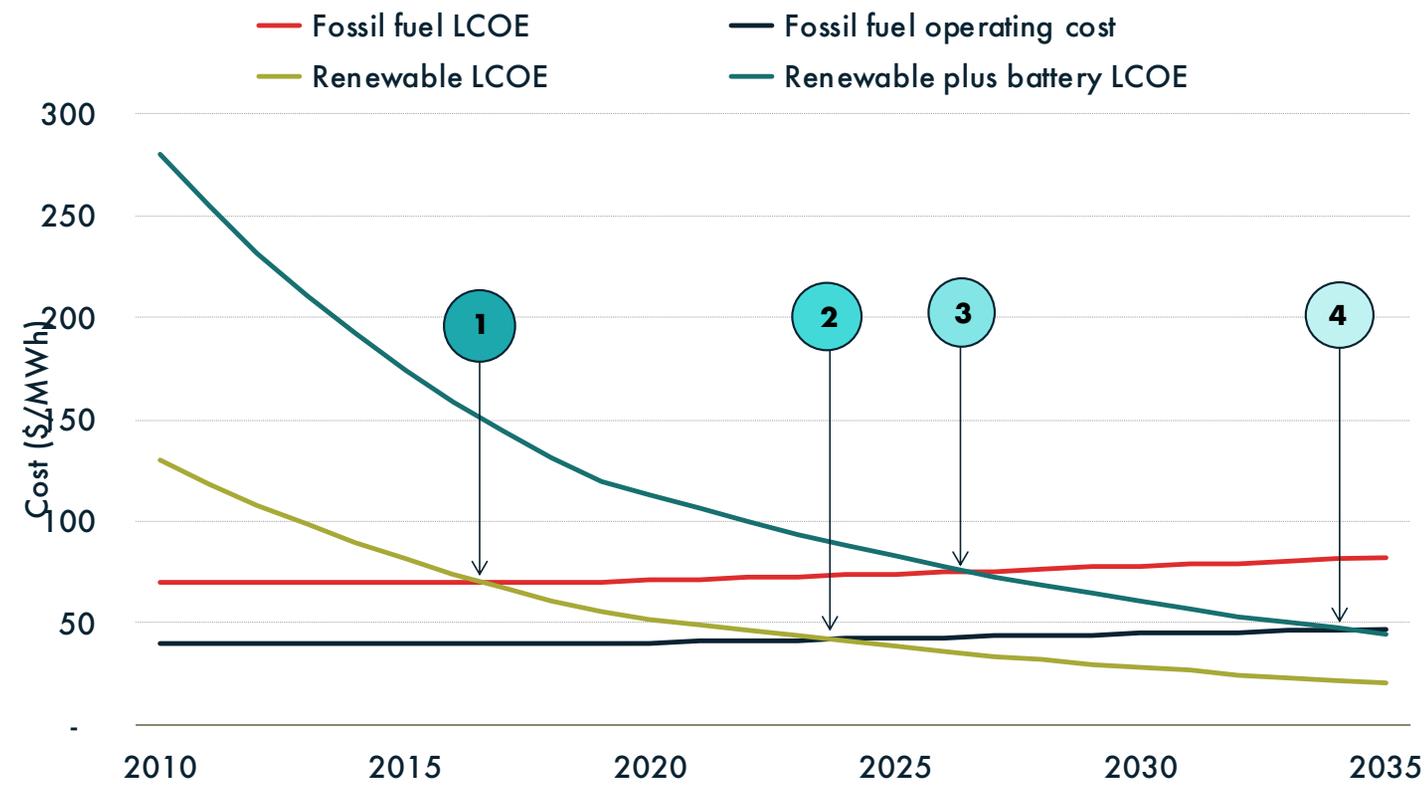
Solar PV
Module price
(\$/W, 2018
real, DC)



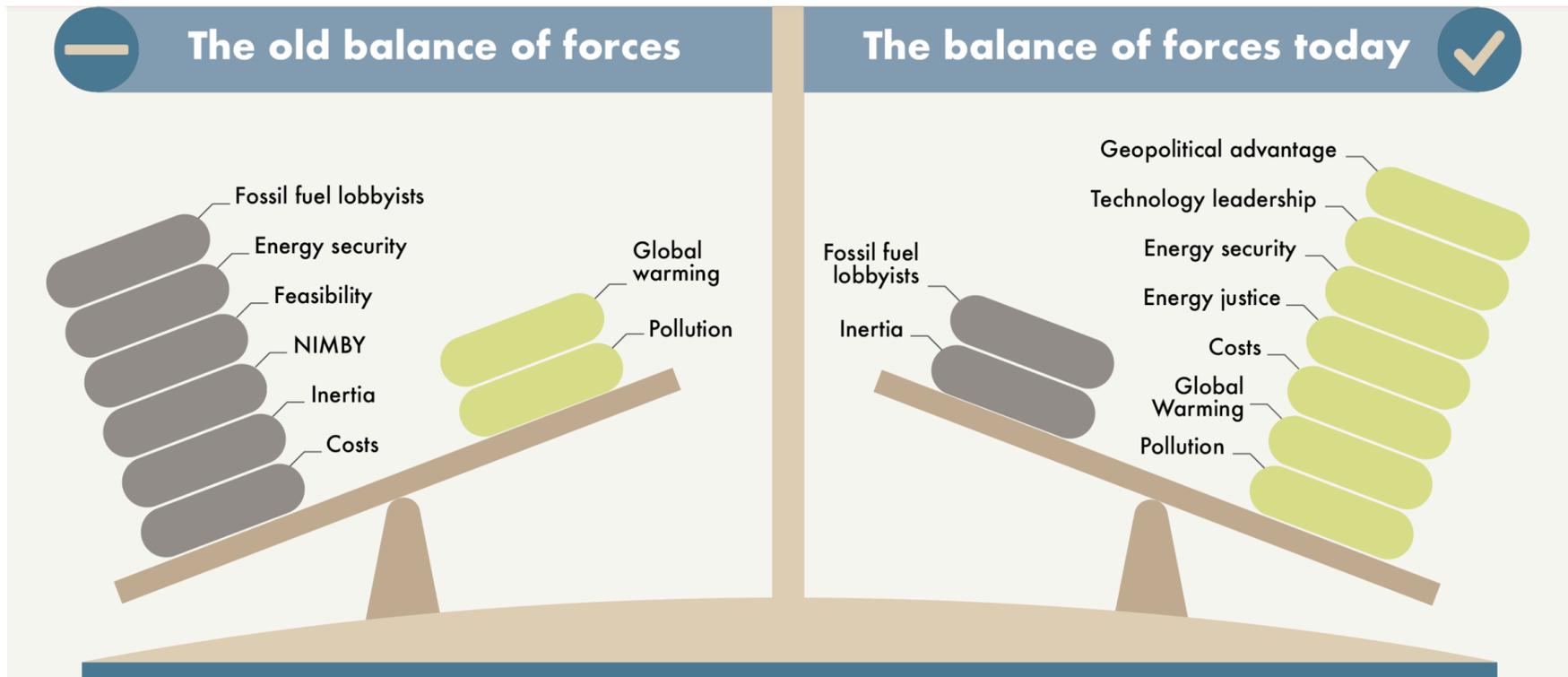
We won't burn them all

That leads to cost tipping points

The cost per MWh and the renewable tipping points



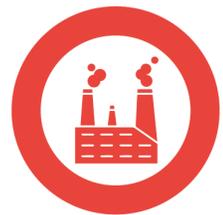
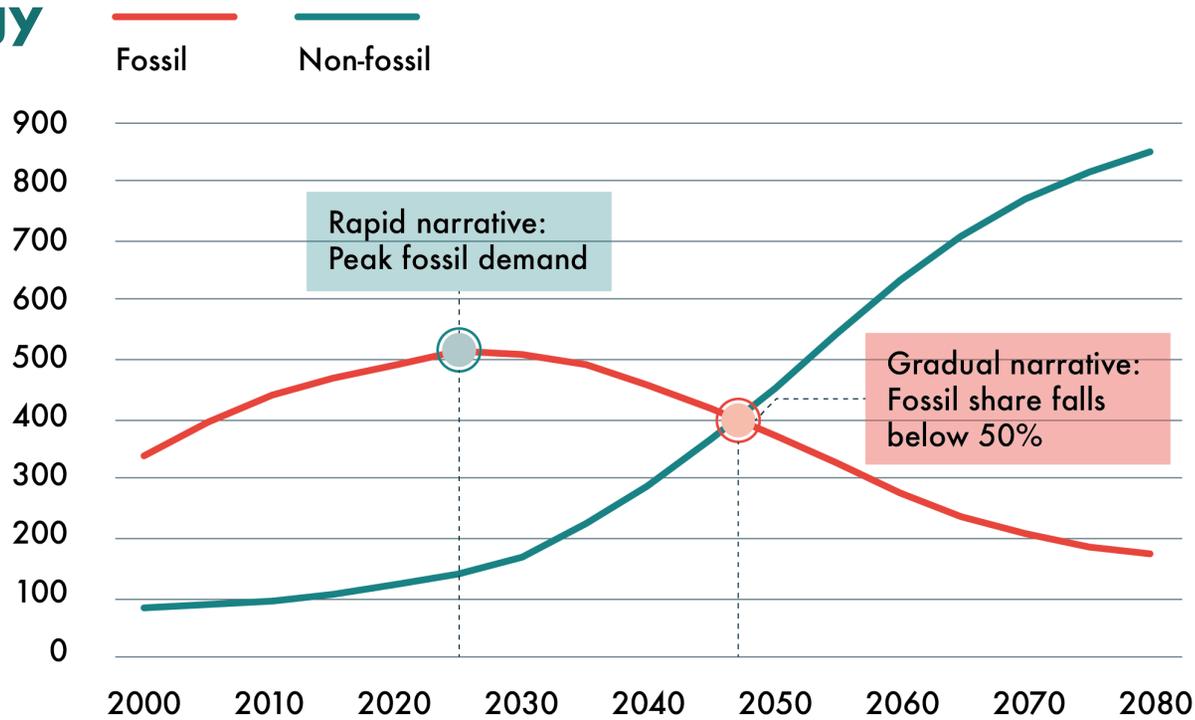
And a political tipping point



What matters in the energy transition Investors lose money at the peak

We won't burn them all

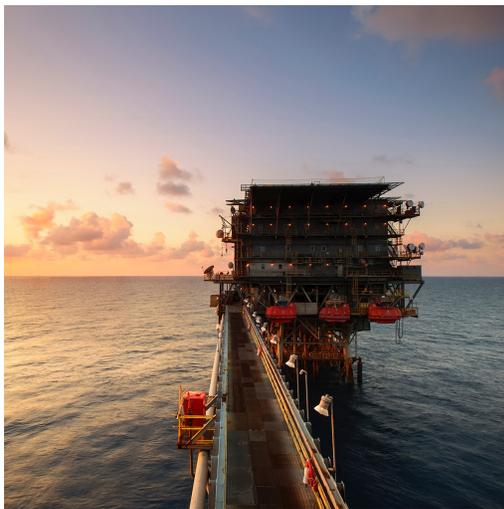
Global energy demand (EJ)



Source: Shell Sky scenario

\$25 trillion

of fixed fossil fuel assets at risk as the world decarbonises and electrifies



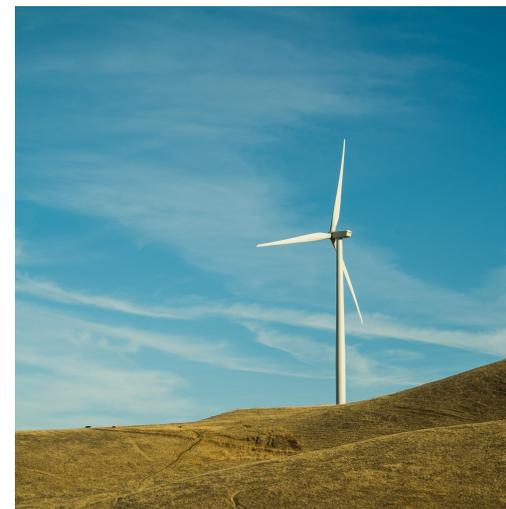
42%

of coal plants across the globe are losing money today



35%

of coal capacity costs more to run than building new renewables



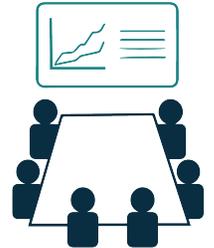
Advocacy, investments + our data working together:

3 tactics to
implement
the strategy

Divestment



Engagement



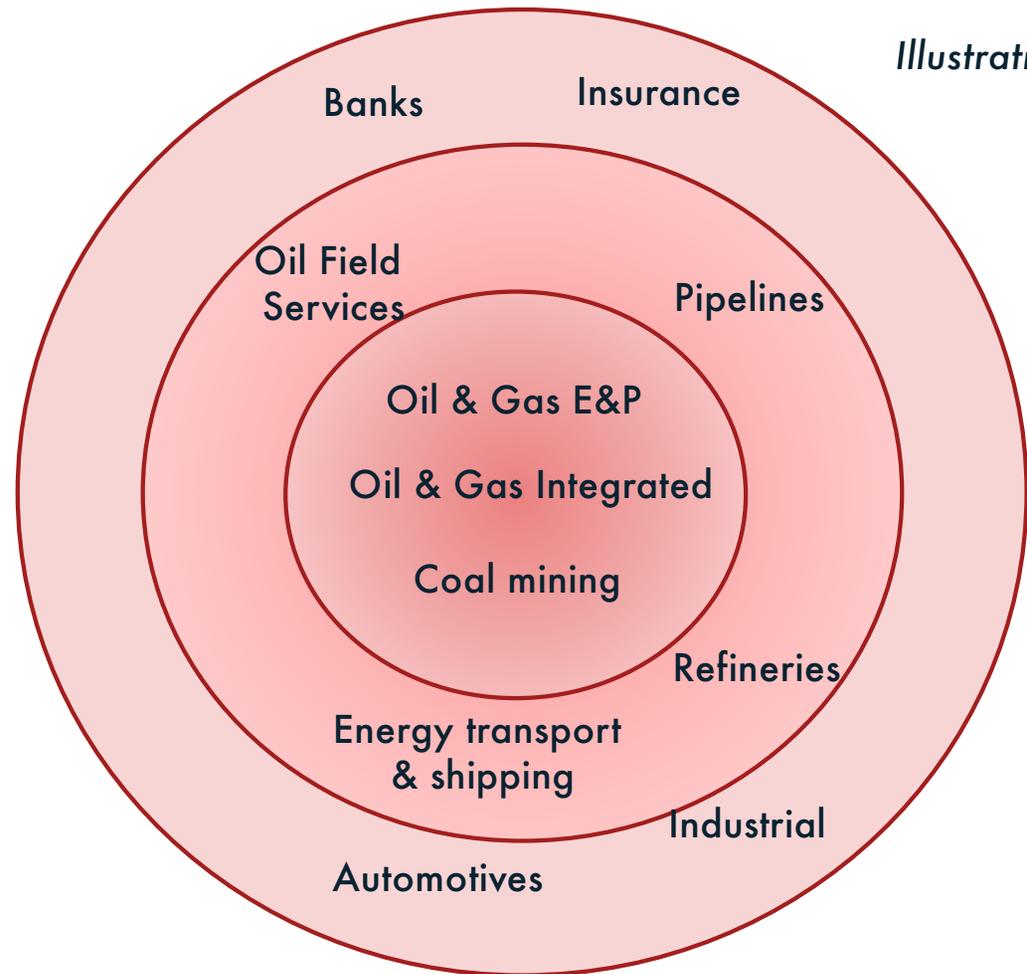
**Financial
Regulation**



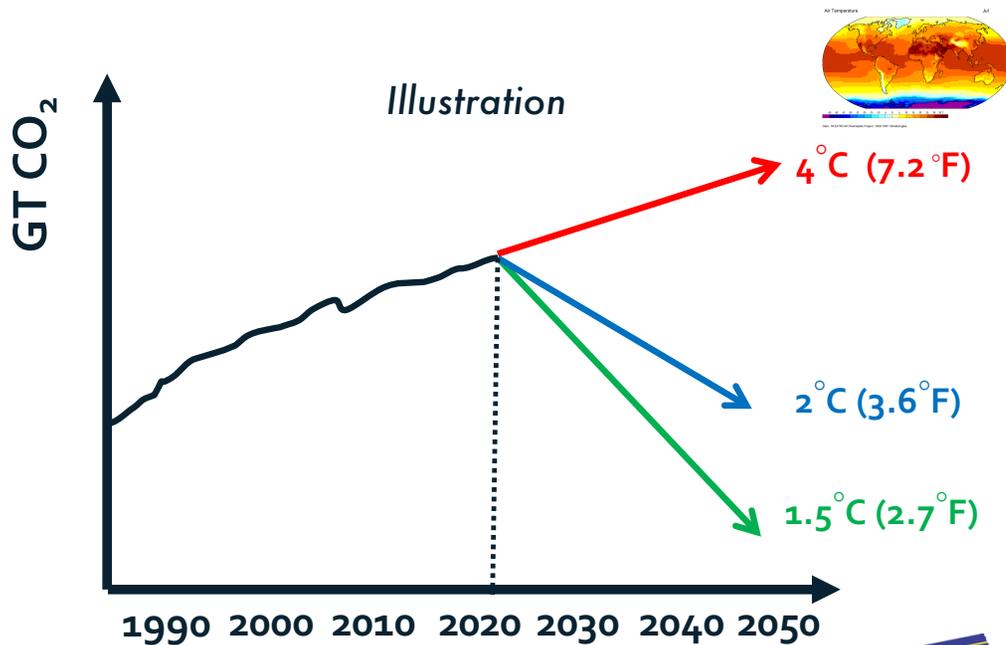
Divestment

Illustration

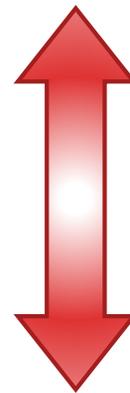
- Divestment by itself is not a strategy, what to do with the proceeds?
- What to sell? Only fossil fuel producers and reserve owners or a larger part of supply chain?
- When is re-investing allowed?
- Low-carbon benchmark
- Active divestment - No new equity for deals and no automatic debt rollover



Climate pathway impact your investments



Physical risks from sea-level rise and weather-related events that damage physical assets, resources and can disrupt trade and supply chains.



Liability risks from parties who've suffered loss from the effects of climate change and seek compensation from those they hold responsible.

Technology risks from cost reductions, new disruptive technologies.

Policy risks from carbon taxes, subsidies, new regulations etc.

Transition risks from a sudden and disorderly adjustment to a low carbon economy.

Transitions – a constant change

Top 10 largest company in the world by market cap

Rank	1980	1990	2000	2010	2019
1	IBM	Nippon Telegraph & Telephone	Microsoft	PetroChina	Microsoft
2	AT&T	Bank of Tokyo-Mitsubishi	General Electric	Exxon Mobil	Apple
3	Exxon	Industrial Bank of Japan	NTT Co.	Microsoft	Amazon
4	Standard Oil	Sun Life of Japan	Wako	Alibaba	Alphabet
5	Schlumberger	Toyota Motors	Walmart	Walmart	Facebook
6	Shell	Fuji Bank	Intel	China Construction Bank	Berkshire Hathaway
7	Mobil	Sanichi Kangyo Bank	Nippon Telegraph & Telephone	BHP Billiton	Alibaba
8	Atlantic Richfield	IBM	Exxon Mobil	HSBC	Tencent
9	General Electric	Exxon	Lucent	Petrobras	Johnson & Johnson
10	Eastman Kodak	Exxon	Deutsche Telecom	Apple	JPMorgan Chase

**By 2025, 2030 ...
which low carbon transition
company(ies) will be in top?**

Disclaimer

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If you are interested in knowing more,
please get in touch:

Henrik Jeppesen, CFA – Head of Investor Outreach North America

hjeppesen@carbontracker.org

Phone: +1 (917) 435-4348