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

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Challenging Business as Usual

"There must be a source of energy down there."

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Carbon Tracker
## Carbon Tracker Initiative – founded in 2011

<table>
<thead>
<tr>
<th>Identity</th>
<th>Carbon Tracker is an independent non-profit financial think tank funded by EU and US foundations interested in climate.</th>
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<tbody>
<tr>
<td>Vision</td>
<td>To enable a climate secure global energy market by aligning the capital markets with climate reality.</td>
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<td><strong>Mission</strong></td>
<td>Mapping the transition for the fossil fuel industry to stay within a 2-degree budget.</td>
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<td><strong>Strategy</strong></td>
<td><strong>Empower investors</strong> to identify and switch off capital to the highest cost, highest carbon projects.</td>
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<td><strong>Engage with companies</strong> to re-assess both the viability of such projects and of their business model.</td>
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<td><strong>Educate mainstream financial markets</strong> and <strong>policy-makers</strong> over the risk of a disorderly transition.</td>
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<td><strong>Work with financial regulators</strong> to bring transparency on carbon and stranded asset risk and the fossil fuel risk premium.</td>
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Key takeaways

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

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.

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

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.
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

Source: “Unburnable Carbon, Wasted capital and Stranded Assets”, 2013, Carbon Tracker & Grantham Research Institute at London School of Economics. Carbon budget data based on 80% probability of achieving the temperature targets.
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

We can’t burn them all
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.

Source: Financial Times, WHO, World Bank
Solar started a technology revolution

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

Source: Paul Maycock, BloombergNEF
That leads to cost tipping points

The cost per MWh and the renewable tipping points

Source: The Trillion Dollar Energy Windfall (Carbon Tracker, 2019)
And a political tipping point

Source: The political tipping point: Why the politics of energy will follow the economics (Carbon Tracker, 2019)
What matters in the energy transition ... 
... Investors lose money at the peak

Global energy demand (EJ)

Source: Shell Sky scenario, The Speed of the Energy Transition (Carbon Tracker, 2019)
$25\text{ 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

Source: 2020 Vision: Why you should see peak fossil fuel coming (Carbon Tracker, 2018) + Powering Down Coal (Carbon Tracker, 2018)
Advocacy, investments + our data working together:

3 tactics to implement the strategy

- Divestment
- Engagement
- Financial Regulation
Divestment

- 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.

Source: Carbon Tracker
Transitions – a constant change

Top 10 largest company in the world by market cap

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<tr>
<td>1</td>
<td>IBM</td>
<td>Nippon Telegraph &amp; Telephone</td>
<td>Microsoft</td>
<td>PetroChina</td>
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<td>2</td>
<td>AT&amp;T</td>
<td>Bank of Tokyo-Mitsubishi</td>
<td>General Electric</td>
<td>Exxon Mobil</td>
<td>Apple</td>
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<td>Industrial Bank of Japan</td>
<td>NTT Communications</td>
<td>Microsoft</td>
<td>Amazon</td>
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<tr>
<td>4</td>
<td>Standard Oil</td>
<td>Sumitomo Mitsubishi Bank</td>
<td>Cisco</td>
<td>BHP Billiton</td>
<td>Alphabet</td>
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<tr>
<td>5</td>
<td>Schlumberger</td>
<td>Toyota Motors</td>
<td>Walmart</td>
<td>Facebook</td>
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<tr>
<td>6</td>
<td>Shell</td>
<td>Fuji Bank</td>
<td>Intel</td>
<td>China Construction Bank</td>
<td>Berkshire Hathaway</td>
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By 2025, 2030 ... which low carbon transition company(ies) will be in top?

Source: Bloomberg, Carbon Tracker

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Thanks for listening

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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