

Defining the carbon bubble

Unburnable Carbon: Australia's carbon bubble • April 2013

What is a 'carbon bubble'?

In 2012, the International Energy Agency acknowledged that, in the absence of carbon capture and storage technology, more than two thirds of coal, oil and gas reserves cannot be burnt before 2050 if we are to have a 50 per cent chance of limiting global warming to 2°C.

Currently, the global stock of fossil fuel reserves is equivalent to 2,860 gigatonnes of carbon dioxide (GtCO₂).

To increase the odds to an 80 per cent chance of achieving the target, Carbon Tracker with the Grantham Research Institute at the London School of Economics estimate a global carbon budget between 500GtCO₂ and 900GtCO₂. This includes emissions from oil, gas and coal.

If coal globally is allocated 40 per cent of these budgets, coal's current share of global fuel combustion emissions, this gives a global coal carbon budget of 200 – 360GtCO₂.

The 'carbon bubble' relates to the build-up of risk in carbon-intensive assets and investments that are exposed to rapid devaluation if social, political, regulatory and technological developments enable achievement of this warming goal.

Just as sub-prime investments were based on assumptions of permanently rising house prices, carbon bubble or 'sub-clime', investments assume relentless demand for fossil fuels.

Growing constraints on coal use in China and accelerating investments in Asian clean energy represent threats to this assumption. Step changes in these developments and/or effective carbon prices in Australia or in export markets could render many of these investments relatively worthless and stranded.

A conservative estimate of usable Australian coal resources would use up 75 per cent of the precautionary 200GtCO₂ global carbon budget for coal.

What are the implications?

The vast majority of Australia's coal, oil and gas resources (and therefore potential emissions) are exported. Australian coal represents 11 per cent of global coal markets in a competitive marketplace.

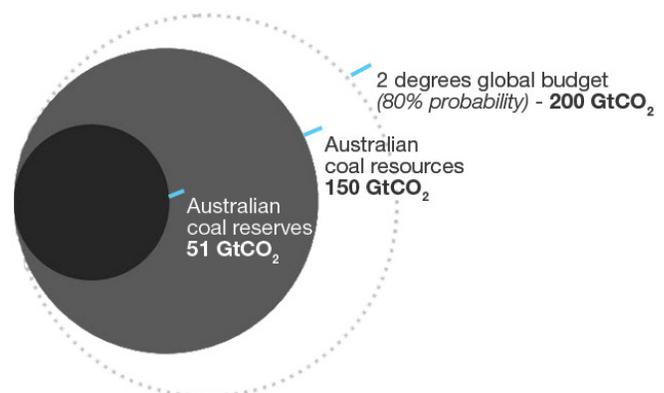
The risk of unburnable carbon grows as an increasing number of our major export partners are tightening their belts on greenhouse gas emissions and, in particular, their coal use.

This means that investments in Australian coal that may seem sound at the moment *could easily turn into stranded assets* that cannot be sold in a world acting on climate change.

Investors and governments can pretend that the world will not act on climate. But the reality is that *carbon prices and/or clean energy incentives are being put in place in all major export destinations* and progress is being made on global climate negotiations.

The OECD published research in January 2013 showing that – whether through a tax, market mechanism, or other policy – there is an effective carbon price on energy in every OECD country. Countries like China and South Africa are also introducing carbon pricing measures.

Figure 1: Australia's coal reserves and resources compared to the global carbon budget. Australia's coal reserves and expected resources equal 25 and 75 per cent, respectively, of the precautionary global coal carbon budget to 2050.



What can be done?

The carbon bubble will have negative economic consequences for the entire global economy.

Carbon Tracker makes the following recommendations for how investors, companies, accountants and regulators can address the carbon bubble.

Investors

Investors need to factor the carbon budget into their investment strategy to reduce exposure to carbon intensive activities.

Further research needs to be commissioned to integrate carbon constraints into valuation methodologies. This analysis should be used to reallocate funds from high-carbon investments to low-carbon investments.

For very large investors such as superannuation and pension funds that manage over US\$50 trillion of assets globally, it is not viable to simply divest their portfolio from *all* investments related to fossil fuels. These investors need to use their influence to improve the way investee companies measure, monitor and manage carbon-related risks.

Some AU\$22 billion is spent annually on reserves development in Australia. Of that amount, AU\$6 billion is spent on finding and developing coal reserves alone.

But capital may be better deployed in to other sectors of the economy to limit the assets becoming uneconomic or stranded.

The Climate Institute and the Asset Owners Disclosure Project have long been calling for greater disclosure of the climate change-related risks faced by institutional investors. These include the physical impacts as well as the regulatory risks such as the anticipated profile of future carbon liabilities and the carbon price assumptions used in capital expenditure assessments.

The Climate Institute and the Asset Owners Disclosure Project believe these risks are best managed through hedging investments in low-carbon assets/investments; this view is supported by leading institutional investment consultant Mercer.

Companies

Companies should disclose the forward-looking numbers on their emissions. Traditionally, reporting has only covered disclosure of historical annual emissions rather than the emissions potential of fossil fuel reserves (in the case of extractive companies) or other forward-looking indicators.

In an investment world looking at future risks and opportunities, this information gap needs to be closed.

All businesses – but especially those that have high emissions intensity and are exposed to future carbon regulation, when long-term capital investment decisions are taken – need to factor in the many risks associated with climate change.

Accountants and auditors

Carbon Tracker finds that no auditor has publicly disclosed the assumptions they use in their valuation of fossil fuel-related assets regarding the path of future carbon prices, demand for fossil fuels or regulation of emissions.

Yet it is critical to understand how broadly-recognised carbon budget estimations are being factored into Australian company's valuations of their assets, in particular the long-lived assets used by emissions-intensive companies.

More work needs to be undertaken on the valuation of companies' fossil fuel reserves and resources as well as the development of guidance for impairment valuations.

Regulators

Climate change is a systemic risk, which is already having an impact through changing energy sources and increased frequency of extreme weather events. The financial markets have proven they are not currently set up to respond adequately to systemic risks, with the current structures too focused on short-term returns.

Australian companies and investors clearly have a high exposure to the coal sector in particular, and therefore the market needs to respond to this issue. Other regulators have already started to issue guidance on the disclosure of climate-related risk (for example, the Securities and Exchange Commission in the United States) and monitor the level of market exposure (for example, the Bank of England).

Australia needs to introduce similar measures to monitor and manage this risk, working in collaboration with other regulators facing the same issue at a global level. The regulator can only understand the level of risk if disclosure of relevant data is made mandatory. This should be an annual process.

For more information on *Unburnable Carbon: Australia's carbon bubble*, visit

www.climateinstitute.org.au/unburnable-carbon.html and www.carbontracker.org/australia