

Climate change and the myth of stranded assets

Nick Butler [Author alerts](#) Sep 28 07:30 [Comment](#)

The energy business is entirely familiar with the concept of stranded assets. Now, however, a new concept has been introduced: the idea that some assets, specifically hydrocarbons, will inevitably be stranded and left undeveloped as the world reduces its hydrocarbon consumption in order to avoid the risks of climate change. The question is whether investors and companies should be worried by that concept.

Across the world all sorts of resources are well identified but cannot be developed. They range from the gas underneath the Prudhoe Bay oil field in Alaska to the coal under North Yorkshire to the large reserves of shale oil in the Paris Basin. All these assets are stranded because of the costs of development, including in some cases regulatory costs imposed in pursuit of public policy goals. In the case of French shale oil and gas, all activity is banned. In some cases, people are working to find a way of bringing the resources to market. In others the only option is to give up and leave them buried.

The new concept, which was the subject of a conference in Oxford last week under the auspices of the Smith School of Enterprise and the Environment, introduces the idea that the category of stranded assets is about to be expanded dramatically as the world adjusts to limiting hydrocarbon use to levels that ensures global temperatures rise by no more than 2C. The level of danger is disputed, as is the precise amount of hydrocarbons that can be safely used – but the differences do not alter the basic thrust of the concept.

If the concept is correct, the amount of coal, oil and natural gas that can be safely used has already been discovered. Over time, through a mixture of fiscal and regulatory moves, hydrocarbons will be priced out of the market. On this analysis exploration is valueless, as are some of the resources already identified. The rest should stay buried and cannot be valued as corporate assets.

Is this logic correct? The debate is important, not just for energy policy but also for investors, because the implication is that the hydrocarbon-based businesses are entering their final decades and will soon cease to be viable as ongoing concerns. If you accept the thesis, unless the owners can swiftly produce the assets they hold, they are also overvalued.

Step back from the emotion of the debate on climate change and it is clear that this logic is correct only if you believe the three assumptions on which it is based.

The first is that the use of hydrocarbons will be limited by public policy action to keep total emissions within the prescribed limit.

The second is that alternative energy supplies will be available in time and at a low enough cost to enable consumers to switch away from hydrocarbons.

The third is that attempts to reduce the amount of emissions generated by the use of hydrocarbons – such as carbon capture and storage (CCS) – will not be viable on the scale required to allow continued hydrocarbon consumption.

I think most observers on all sides of the debate would now reluctantly agree that the third assumption is correct. As reported by Pilita Clark in the FT recently, current CCS projects are limited and minimal, and no clear financial model has been put in place to encourage companies to invest. The decision not to proceed with the scheme planned at Drax in the north of England last week just confirms what most observers have long believed. Most current CCS is economic only because the activity supports enhanced oil recovery. Things may change; but as things stand CCS will not make a major difference.

When it comes to the second assumption, the judgment is less certain. Low carbon energy costs are falling (other than for new nuclear, where they are rising). Solar costs have come down dramatically. There are advances in storage technology – which would transform the economics of renewables that produce only intermittently such as solar and wind – but the big breakthroughs are still the stuff of hope rather than reality.

At the moment low-carbon sources of supply, including nuclear and hydro, provide less than 10 per cent of global total energy supply.

By 2040 on the International Energy Agency's new policies scenario, which is moderately optimistic about action on climate change, they still provide only 15 per cent. One day there should be a major technical breakthrough. But until then we cannot assume that any form of renewable supply is going to displace coal, oil and natural gas. Most long-term forecasts show that renewables will produce growing volumes of energy over the next 20 or 30 years but so will hydrocarbons. Both grow in a world where, even with improving efficiency, total consumption keeps rising.

That takes us back to the first assumption: that the use of hydrocarbons will be limited by public policy to keep emissions below 450 parts per million, which is the normally quoted level of safety.

I believe that assumption is completely unrealistic. It is possible that Europe and the US will limit hydrocarbon use in one way or another, though that judgment is crucially dependent on the development of a political consensus in the US that does not yet exist. President Barack Obama's climate measures could well be overturned by a Republican victory in next November's election.

European policy arguably carries a degree of consensus support but that support has not yet been sufficient to put in place the crucial policy measure – a carbon price.

China will also take steps to limit the use of coal but, with a growing economy, it is very hard to see coal being displaced as the main source of energy supply at any point in the next three decades. Coal plants continue to be built, and only a minority have the super-critical technology that minimises emissions.

Other growing economies such as India remain committed to coal, which is cheap and readily available. There is at present no obvious alternative source of energy for the tens of millions of Indians struggling to emerge from poverty. They cannot afford to pay a high carbon price.

This is a fairly dismal conclusion but when it comes to something as potentially serious as climate change it is best to be absolutely realistic. Campaigns about disinvestment create convenient enemies but solve nothing. The logic is that, to meet the growing energy needs of people with very limited financial resources without taking unacceptable risks with the climate, we have to find a technology that is both low cost and low carbon. When it comes, that will leave some assets stranded or put to other uses. The search for that low-cost low carbon solution should be the real focus of attention for campaigners, governments and investors.

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