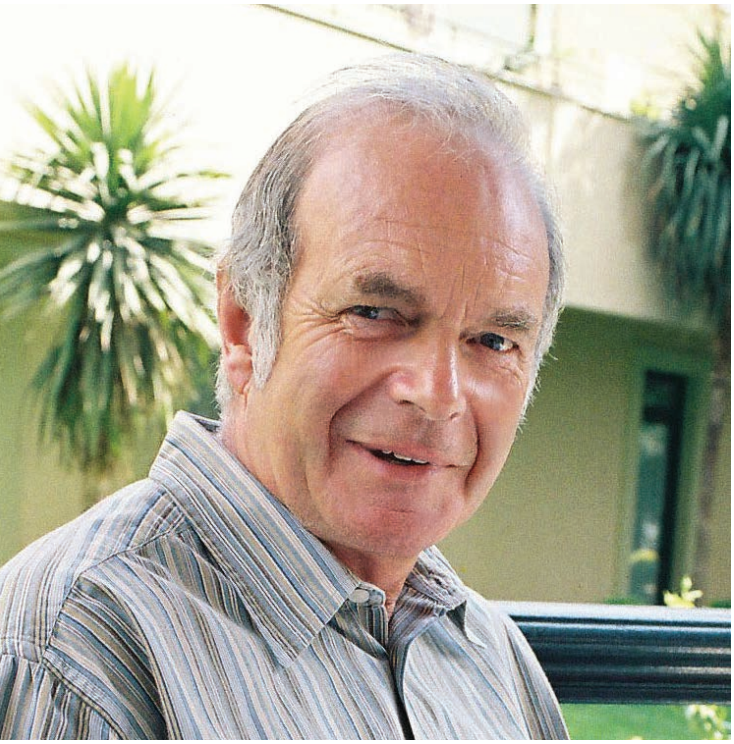
CLIMATE CHANGE

End of the carbon war?



Dr Bryan Lovell OBE CGeol MEI*, Senior Research Fellow in Earth Sciences, University of Cambridge, **suggests victory is in sight in the so-called 'carbon war' in the climate change debate.**

New York City is taking BP, Chevron, ConocoPhillips, ExxonMobil and Shell to court over climate change (see **bit.ly/2p1Yscn**). This unleashing of lawyers in pursuit of billions of dollars appears to raise the prospect of a meaty battle. But is this merely a late skirmish in a long global conflict that is coming to an end?

Victory is in sight for the environmental forces, according to Jeremy Leggett, Founder/Director of Solarcentury, 'scourge of the oil companies' and 'first general of the Anti-carbon Army'. The end of the conflict that Leggett himself named in his book entitled *The carbon war* (Penguin, 1999), involves financial rather than legal forces. On 3 January 2017, Leggett wrote: '... it is rare for a report to hold the potential to change the world. But one published on 14 December 2017 did.'

World-changing report

The new report hailed by Leggett was prepared by a Task Force on Climate-related Financial Disclosures (TCFD), chaired by Michael Bloomberg, former New York City Mayor and CEO of Bloomberg. The task force was set up in December 2015 by the G20's Financial Stability Board, chaired by Mark Carney, Governor of the Bank of England.

According to Leggett, the TCFD will give investors: '... visibility of how climate-change risk will affect individual businesses, and a roadmap for reacting to it.'

Investors appear to be using that visibility. An announcement by Bloomberg and Carney in Paris, on 12 December 2017, claims initial success for the TCFD: '237 companies with a combined market capitalisation of over $6.3tn have publicly committed to support the TCFD. This includes over 150 financial firms, responsible for assets of over $81.7tn.' TCFD is now leading the commercial world along the path to a low-carbon economy. If a particular company does not think this is a wise course to follow, they can bet against it – hoping their investors will share their views.

So far, so peaceful. But Leggett's claim of victory in the carbon war suggests that animosity to fossil fuels will persist given that the '...intention is for the capital markets to behave consistently with the aims of the Paris Agreement on climate change; which is to say progressively retreat from fossil fuels and increasingly favour clean-energy investments, not least renewables.'

Too soon for obituary

Do we really have to retreat from coal, gas and oil? Many readers of *Petroleum Review* will hope not. There is indeed hope, because we know very well that the fundamental problem is not the fuels themselves, but the way we use them.

The customers of the oil companies are responsible for over 80% of emissions of carbon dioxide (CO_2) resulting from use of their products. The customers could control those emissions, but only by using the skills of those same companies. Using advanced petroleum technology, we know it is technically feasible to bury CO_2 safely in subsurface reservoirs, once we've made use of the carbon. Obituaries for the fossil-fuel industry are premature.

Here, I should declare my hand. I'm a geologist with a long-standing involvement with the resource industry – formerly with BP Exploration, most recently as adviser to BHP. I might perhaps be expected to be in the ranks of those who have resisted the Anti-carbon Army. I'm not in those ranks, because I trust messages from the rocks.

Rock solid argument

Leggett named the 'carbon war' in 1999. That same year saw the publication of the first in a crucial series of studies of past changes in climate, chronicled in the geological record. This body of observational science independently supported the concern of climate scientists about human-induced climate change.

The ability to analyse past changes in climate on a near-human timescale was demonstrated in 1999 in a paper in *Nature* by Richard Norris and Ursula Rohl, in which they describe a core of 55mn-year-old rocks recovered from beneath the sea bed of the North Atlantic Ocean. These rocks contain evidence of a rapid and large input of carbon to the Earth's atmosphere, comparable in size and rapidity to that for which we are now responsible. The same rocks also contain evidence of rapid change in climate caused by that injection of carbon, creating inimical conditions for various forms of life. In a commentary published in the same issue of *Nature*, Gerald Dickens states that: '...we can now begin to view aspects of Earth's future in an entirely new light'.

For some of us, real conviction that we should be concerned about climate change came in 1999, with that new geological evidence. By then, I had retired from full-time work with BP, to pick up my research interests. Bearing the 21 October copy of *Nature*, I went to ask my Cambridge colleague Nick McCave, Professor of Geology: 'Is this as important as Dickens says?' The answer: 'Yes', it was.

McCave was one of the distinguished authors of a statement on climate change published by the Geological Society of London in 2010. Those seeking guidance on the significance of past changes in Earth's climate recorded in rocks and ice should start with this document.

In the 21st century it is no longer defensible for petroleum geologists to use, as an excuse for inaction, their reservations about the predictive models of the climate scientists. Month-by-month since 1999, the geological evidence supporting the climate scientists has grown more and more convincing. Geologists in the oil industry know from hard experience it is unwise to argue with a rock.

Patchy oil industry response

BP and Shell expressed public concern on climate change in 1997 – a big help to Leggett and his nascent Anti-carbon Army at the Kyoto climate summit later that same year. Other majors took a different attitude concerning Kyoto, leading to a North Atlantic divide in the oil industry. The first evidence that this divide was closing came only years later, during a BP–ExxonMobil debate on climate change at the Geological Society in London in 2003.

The closing of the divide came through the power of observational science. As the geological evidence for concern on climate change built up, some oil folk previously unconvinced by the predictions of the climate scientists began to reassess their position. Some of those working in the resource industry kept up with the scientific literature on climate change and accepted its message. Others did not.

As a result, acceptance of responsibility by the fossil-fuel industry was patchy. Some companies took the lead. In other quarters, reluctance to act went as far as denial of responsibility. That denial of responsibility is now happily becoming a thing of the past.

Industry picks up reins

OGCI Climate Investments is an example of constructive new attitudes. A consortium of 10 major oil companies (BP, CNPC, Eni, Pemex, Reliance, Repsol, Saudi Aramco, Shell, Statoil and Total), based in 10 different countries, promised to make $1bn of low-carbon investment over the next 10 years. The resource industry at large has begun to take appropriate responsibility for its own emissions, and for helping its customers to do the same.

In September 2015, BHP anticipated the work of Bloomberg's TCFD and led the way in publishing an analysis of its portfolio against the background of a global move towards a low-carbon economy. Other resource companies are now beginning to develop portfolios that are resilient in the face of the targets set at the December 2015 Paris climate summit.

Those targets are too demanding to allow in-fighting. Over the last 20 years, the oil industry has frequently defended its activities by reminding us that gas is a lower-carbon fuel than coal. Significant reductions in emissions have indeed been achieved in recent years in individual nations, by substituting gas for coal. But the Paris targets will not be met unless the CO_2 generated in the use of gas is also captured and stored. One part of the fossil fuel industry cannot save itself simply by picking on another.

Nor will the Paris targets be met at all easily without using a wide range of technologies and resources. We might in the end find that carbon capture and storage (CCS) cannot be developed safely on an appropriate scale and at a manageable cost. If so, the game is indeed up for the fossil fuel industry and hitting the Paris targets will become much more difficult.

We do know already that whatever path is followed eventually, we will need to extract from Earth the many resources we need for nuclear, solar and wind power. Geologists are preparing to cope. In June 2018, the International Union of Geological Sciences will tackle these issues at a conference in Vancouver, Canada; a preparatory meeting took place at the Geological Society in London in November 2017.

The Anti-carbon Army fought for the right basic cause – we really do need a rapid reduction in emissions of CO_2 from human activities. But, the wartime tactic of general assault on the resource industry has had its day.

Responsibility and investment

The largely independent approaches of climate scientists and Earth scientists have combined this century to confirm the seriousness of human-induced climate change. Building on the strength of that rational cause for concern, Bloomberg's TCFD helps the Anti-carbon Army's long campaign. The crucial nature of that support from the TCFD has been publicly recognised by Leggett himself.

The oil companies are beginning to take appropriate responsibility on their own initiative, without necessarily waiting for encouragement from legislators and regulators. Against that background, the 'New York City versus the oil companies' legal action in 2018 begins to take on the appearance of a battle deep in the jungle, where word has not yet got through that hostilities are at an end.

I suggest that the carbon war is over. In the ensuing peace, we will rely on the skills of industry to find the resources we need – and to help its customers use those resources wisely. Through our choice of investment, we will support the companies that offer us this help. Those not willing to do so can take their chances. ●

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