{ ENERGY }

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The accepted cost-supply cycle of oil has been turned on its head by new extraction technology. And renewables are asserting their role, too

Remember 'peak oil'? This was the idea popularised by a Shell geologist back in the 1970s, that because the world's reserves of oil were finite, and at that time thought to have been already largely discovered, production would soon peak and then go into precipitous decline. By now, we were meant to be running out, resulting in sky-high prices, rationing and descent into international conflict for scarce energy resources.

It never happened. In the event, more and more oil and gas keeps on being discovered. What's more, the technologies for extracting it at relatively low cost have also come on in leaps and bounds. Tight oil and shale gas in the US are only the most high-profile examples of this.

This has given rise to a new worry for fossil-fuel producers – 'peak demand'. Already, demand for hydrocarbons in advanced economies is beginning to fall. Rising use in the developing world ensures that, overall, global consumption should continue to grow for some years to come yet, but the peak may be much closer than generally appreciated.

In its latest *Energy Outlook*, BP expressed the view that for oil alone, known reserves are sufficient to satisfy expected global demand two times over for at least the next 25 years. Far from running out, there is an enormous abundance of the stuff out into any foreseeable future.

SHUTTERSTOCK

A barrel of oil might well be worth more left in the ground

As a commodity product, oil is quite unusual in that it manages to accommodate both low- and high-cost producers. This anomaly has a lot to do with the idea of 'peak oil'. A barrel of oil, it was commonly thought, might well be worth more left in the ground than extracted. Assuming demand remained stable or increased, its value would appreciate as global reserves began to deplete.

Big low-cost producers, such as Saudi Arabia, therefore have a vested interest in constraining supply, driving the price up to levels that support much higher-cost production. But if demand goes into decline while known reserves keep expanding, then everything is turned on its head. A substantial proportion of reserves will end up essentially valueless, or 'stranded', and therefore never extracted.

In such circumstances, it would pay for producers to forget their self-denying constraints, and sell as much of the stuff as possible while they can still get a halfway decent price for it. This, in turn, would create a glut, and a permanently depressed price. OPEC's recent agreement to limit production would become the organisation's last hurrah, and wouldn't hold. Eventually, one or more members will go for broke.

Underpinning this way of looking at the future of oil is not just the constantly increasing size of known reserves, together with the likely falloff in demand as economies mature; another peril already biting at the industry's ankles is the growth of renewables.

You don't have to buy into the prevailing orthodoxy of man-made climate change to see that these 'clean energy' sources are fast approaching a tipping point, which, through economies of scale and improvements in efficiency, promises to make them cost-competitive, possibly quite soon, with more established forms of energy supply.

Eventually, subsidies and carbon taxes will no longer be required to ensure their success. Light-emitting diodes, onshore wind, solar power and electric vehicles have all achieved such momentum that it is now more appropriate to see them as a transformational tech shift than a regulatory response to global environmental challenges.

Renewables are very unlikely ever to replace hydrocarbons entirely – or at least not until a substitute for aviation fuel is found; oil and gas, if not coal, will remain a key part of our energy needs for quite a bit longer yet. But we could be looking at a much swifter decline than generally imagined, with big implications for the price of oil and, therefore, the future of its main producers.

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