Global drivers of change: energy

Jeremy Leggett
Chairman, Solar Century London

The UK offers a fascinating snapshot of the energy-security problems many countries will experience in the years ahead. This short essay reviews the state of play.

No electricity when you flip the light switch and no petrol when you want to fill your tank? Both are on the cards by the middle of the decade, according to recent warnings from the heart of the British establishment. In the first week of February, the electricity and gas regulator, Ofgem, broke wholly new ground with a strident warning that lights will go off by the middle of the decade, and fuel poverty will rise still further, unless there is firm action and strong leadership from government. A week later, the UK Industry Taskforce on Peak Oil and Energy Security - a body I convened - turned the spotlight on oil, predicting a global and national oil crisis within five years at most, absent strong action by governments.

At the heart of Ofgem's new pessimism on electricity are various regulatory requirements - European and British - to retire old coal- and nuclear power plants. To replace them, and meet rising demand, energy companies will need to invest £200bn in essential new generation, and energy bills will have to rise appreciably to pay for this, no matter what source of energy used. Many people will be unable to afford to heat homes as a consequence. Moreover, Ofgem doubts the energy companies will invest enough as things stand, meaning that even if people can afford the electricity it may not be there when they flip the switch.

Reform is urgently need, obviously. Deregulation has failed, Ofgem says. A free market approach is "no longer an option." Obligations to supply may be required of energy companies. Nationalisation of power may be necessary, with the creation of a central buyer for energy.

This last option is almost incredible: a former champion of deregulation now advocates a return to some kind of socialism. Ofgem once enthusiastically backed breakup of the nationalised energy industries, and the stripping away of regulation. But the financial crisis has changed regulator Alistair Buchanan's mind. As Andrew Watkin, a prominent property consultant, puts it: "a centralised renewables market might sound Stalinesque but it may be what is required to bring a structure and concerted strategy to the major campaign of the coming years – creating energy and protecting its supply."

Ofgem's forecasts could mean average household energy bills of more than £2,000 by 2020. The consumer group u-switch says the figure could reach £4,000 if events conspire against the markets. Currently a shameful 4.6m of UK households are in fuel poverty (defined as spending more than 10% of income on energy).

As for gas, the International Energy Agency and some gas experts expect the current global gas glut to last until around 2015, to be followed by a swift tightening of supply. "Around the middle of the decade we expect a perfect storm of falling domestic gas production, economic recovery and tightness in the global LNG (liquifed natural gas) market," says Professor Jonathan Stern, "and we might not get very much warning. It could flip in a matter of weeks."

Big bullets need to be bitten by leaders here, or many people are going to suffer. The system is broken. Privatisation of the gas sector in 1986 and electricity in 1989 has done little to produce the efficiency via competition that was trumpeted as the reason for the whole exercise in the first place. The privatisation of the nuclear industry in 1996 has proven to be a shambles, with British Energy having to be bailed out by the taxpayer within six years. If industry cannot and will not produce the goods under the current rulebook, then government must step in.

Adding oil to the equation deepens the crisis and makes the middle of the decade look like a very

stressful time indeed. This is how the CEOs and Chairmen of the companies involved in the UK Industry Taskforce on Peak Oil and Energy (ITPOES)- Richard Branson of Virgin, Ian Marchant of Scottish and Southern, Brain Souter of Stagecoach, Phillip Dilley of Arup and I – describe the situation in the forward of our second annual report. "The next five years will see us face another crunch – the oil crunch. This time, we do have the chance to prepare. The challenge is to use that time well. ….Our message to government and businesses is clear: act. Don't let the oil crunch catch us out in the way that the credit crunch did."

In the report, we produce data that suggests a peak of global oil production at less than 95 million barrels a day, up from some 85 now, and we summarise fears that could result in a peak of less than 92, plus a steep fall beyond the peak, all at a time when demand is rising well in excess of 100 million barrels a day. This is a loud blast of the whistle, then, from a fairly broad group of companies. Neither are we alone on this side of the "premature peak oil" debate. The CEO of Total is on record as saying the world will never produce more than 89 million barrels a day, and the IEA has warned of an oil supply shock within five years.

But the taskforce companies find themselves on the minority side of a somewhat polarised debate. Those on the other side - led by BP, Exxon and others - offer a much more comforting narrative: forty years of supply at least, and no chance of global oil supply dropping before demand does. Theirs is the view that is favoured in most governments, and in boardrooms, often implicitly. I know of no company that views premature peak oil as a serious risk issue.

All this may soon change. The UK government had historically echoed the BP line, until our report was published. Senior government officials had told taskforce members that they saw no risk of premature peak oil, and declined the invitation of the companies to convene a government-plus-industry taskforce. The 2009 Wicks Review of UK energy security allocated a dismissive one page-and-a-bit to peak oil in a 119 page document. But at the press conference in the Royal Society where the taskforce released the report, it became clear that the UK government response had changed. They were no longer certain who was right. The head of international energy security at DECC, Chris Barton, said: "we need to work together (with industry) to do more - eg to consider recommendations in the report that we're not currently acting on." DECC will set up a forum for doing this.
Those of us who aspire to leadership need to enjoy some success here. Otherwise, at minimum, a lot of very cold old grannies are going to be sitting in the dark, with rationed fuel for any vehicles that carers might want to use to ferry them to safety. In a worst case, social cohesion will come under grave pressure.

Meanwhile, events in the Gulf of Mexico re increasingly pertinent to the energy supply crisis. A company that prides itself on support for education, a company that can only survive by attracting a critical mass of the best and brightest to go and work for it, has provided the world with a slow-motion train-wreck of a case-history in ruinously flawed risk-assessment. Testimony from rig workers already shows that BP's Deepwater Horizon disaster involved short cuts in work practices. The unfolding post-mortem may yet show that some of the practices were criminal.

As it now admits, BP "did not have the tools" to contain a deepwater oil leak. Its failure with that risk should surely now raise questions about its approach to other risks. Top of the list must be the threat that global oil production will fall sooner than generally forecast, ambushing oil-dependent economies with a rapidly opening gap between supply and demand. The approach of peak oil worries growing numbers of people, quite apart from the UK industry taskforce. But, until now, BP has poured scorn on the worriers, encouraging the oil industry's effort to reassure society about peak oil.

Every year BP publishes a report that is effectively a risk assessment on peak oil arriving prematurely. Its Annual Statistical Review of World Energy, routinely states that there are about 40 years of proved oil reserves, that advances in technology will enable much more to be found and produced, that rising oil prices can finance the necessary exploration and infrastructure, and that global oil supply can go on rising for decades. Every year, peak-oil worriers say they doubt the Opec oil producers'

reserve statistics that are echoed in BP's review, that technology can only slow depletion not reverse it, that rising oil prices do not help when it takes so many years to extract new oil from increasingly exotic locations and that global supply is heading for an imminent fall.

BP's disaster has mired a regional economy, hammered the company's share price and dragged down the FTSE 100. Yet failure with the peak-oil risk assessment would render such wreckage insignificant.

The credit crunch nearly gave us the second Great Depression. As for the oil crunch, the ITPOES companies fear an irrecoverable fall in global oil supply by 2015 at the latest and that if oil producers then husband resources, a global energy crisis could abruptly morph into energy famine for some oil-consuming nations.

Yet consider the complacency with which BP approaches this risk, even as the multi-billion dollar downside implications of their failures with risk in deepwater production, and onshore management of American oil refineries, washes over them. After BP's chief economist finished his presentation launching the annual BP Statistical Review of World Energy on June 9th, I reminded him that last year he had played a question on peak oil for laughs, pouring scorn on the issue. In the interim, I pointed out, more and more people had become worried about the prospect for a premature peak in global oil production, not least the companies in the ITPOES taskforce. Given the heightened stakes with risk assessment in BP's world of late, how safe did he feel he that BP is serving its shareholders well by insisting, as he had, that "reserves remain sufficient to meet demand growth" and that "the supply will never peak". As he well knew, growing numbers of people – not least in his own industry – consider this assessment to be dangerously complacent.

"Very safe," he said. The invitation-only audience duly laughed.

I felt as the occasional whistleblowers must have felt when Goldman Sachs and their peers heaped scorn on them as they warned that some complex derivatives might end up not being assets at all, but rather toxic sludge on the global balance sheet.

I scanned my copy of the Statistical Review. At the top of the inside cover I read, in a big, bold font: "The Review is one of the most widely respected and authoritative publications in the field of energy economics, used for reference by the media, academia, world governments and energy companies."

A bible in other words. Journalists base statistics in articles on it, the world over. Students base learned papers upon it. World governments base their energy policies on it. And energy companies echo it, for it most part, to all who will listen.

And in small print at the bottom of the same page I read: "The data series for proved oil and gas reserves … does not necessarily meet the definitions, guidelines and practices used for determining proved reserves at company level, for instance, …. as published by the US Securities and Exchange Commission (SEC), nor does it necessarily represent BP's view of proved reserves by country. Rather, the data series has been compiled using a combination of primary official sources and third-party data."

Let me reword that. "We wouldn't necessarily get the SEC to sign off on this stuff, and to be honest, we don't even necessarily believe it ourselves. But go ahead, use it as a bible if you like. We don't want you to be worried about peak oil. The small print gets us off the hook."

"Primary official sources" includes Opec, of course, as the body of the report makes clear. Here is where the problems start. The ITPOES companies, and many others, fear that Opec have been being "political" about their proved reserves since the 1980s. We fear they are 300bn barrels or more light as a result of political reserves, in a supposedly proved global reserve base of over a 1,300 or so, if we include a slug of the tar sands, and forget for the moment about any constraints on deepwater production.

But that is just the start of the concerns. The main worry is that no matter how much oil, or tar, exists underground – as reserves or resources to be discovered – what matters is the rate it needs to be extracted at to keep pace with soaring global demand, mostly driven by China, India, and the Middle East. ITPOES fears the rate of extraction will start to fall fast, and soon: by 2015 at the latest. We argue in our second report, published in February, that it can be seen in the data for reported oil projects and the dates they are due to come onstream. And if the demand goes right on rising, the global economy comes under immediate threat.

The leaders of the other oil companies have been saying that the disaster in the Gulf couldn't have happened to them, only BP. Who can believe that, with some 9 million barrels worth of multiple oil spills across the Niger delta for example?

The business world needs to rewrite risk assessment more generally, when it comes to energy. Two industries have failed society. The investment banking industry told the world it had created a massive new asset class in complex derivatives. Among many disservices in peddling that great mistake, it corrupted its own rating agencies. The oil industry has told the world it has massive assets in deep water, producible at little risk. In pushing that conspicuous failure of risk management, it has corrupted its own regulators – at least in the US. Parallels between the financial crunch and the coming oil crunch are clear, and immensely troubling.

We must all learn from this duo of failures capable of wrecking the world economy. Fast. And whether we learn or not – whether we mobilise clean energy proactively or are forced to reactively, under the gun - we can be sure they are going to drive sweeping change across the energy sector. Starting soon.