



## What price energy security?

**Increasing demands from a growing world population, civil unrest, terrorist attacks, human mistakes, natural disasters... all add up to a future full of “ifs” for the energy industry.**

Energy security is a complex issue which requires a nuanced approach if countries and companies are to avoid finding themselves between the “rock” of increasing energy demand and the “hard place” of meeting climate change objectives. The challenge for governments and the energy industry is not simply “keeping the lights on” by safeguarding supply lines from energy-producing countries to energy-consuming countries. It also requires a coherent strategy to ensure that carbon reduction targets are met at a fair price. Alternative energy sources may provide one pathway to a low carbon future, but the set-up costs, in the present tight credit market, may be prohibitive. Many of the industry experts attending a recent INSEAD Energy Group conference on Energy security in London in March were clear that, in the short- to medium-term at least, fossil fuels still have a role to play in the energy mix. Nuclear provides carbon-free energy but in the aftermath of Fukushima, many European countries are putting concerns about safety over the Green agenda. All these factors when combined together create an often contradictory set of challenges for the energy industry as they try and safeguard supply.

### **Alternative energy now mainstream**

Michael Liebreich, chief executive of Bloomberg New Energy Finance and a member of the World

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Economic Forum's Global Agenda Council on Sustainable Energy, says that we are seeing a historic shift in energy supply from a highly centralised fossil fuel dependency towards a more diverse mix of energy supply and that alternative energy has now become mainstream. In 2011, US\$260 billion was invested worldwide in clean energy. He thinks that the investment landscape for clean energy is changing and that 2012 is going to be a challenging year. The U.S. has overtaken China in terms of investment in clean energy but some of the support mechanisms and incentives in the U.S. are running out. “The question for the U.S. is what happens next year when that production credit has gone,” he adds. In contrast the situation in parts of Europe has been really tough. “Debt markets remain very nervous - particularly in Southern Europe. If they can get the European Investment Bank involved or some of the soft finance then they’re in with a chance, otherwise it’s very hard.” He finds the investment climate in Northern Europe is more conducive: “Offshore wind is strong especially in Germany. There are some big projects coming through the pipeline in the U.K. and Denmark where finance is still flowing.”

France still places great reliance on nuclear energy generation – with 85 percent of its power generated by nuclear. “France will remain a nuclear nation but it is going to become more expensive than

expected. What is more, 85 percent is probably the wrong number for any country because of the downsides of nuclear. You can't switch it off when demand drops which means that you end up dumping it very cheaply on your neighbours. France will maintain its nuclear fleet but I think it's not something that every country can emulate."

### **The myth of global energy insecurity**

The U.K. chairman of Shell, Graham Van't Hof, asserts that the existing system in the U.K. is robust enough to cope with outages and interruptions to supply and he cites the recent record cold winter and a couple of recent North Sea outages. "We do have a robust system, but it makes sense for the government to keep an eye on the long-term to see that it remains robust." "The big Shell view is that the world is going to need 50 percent more energy in 2050 and is going to have to find that with 50 percent less carbon emissions than we've got today," he says. "On the supply side we're going to need all sorts of new sources and that includes new supplies from the Arctic as well as unconventional gas and tight oil. Electrification is going to work for cities but it's not going to work for heavy duty vehicles and it's not going to work for planes. So we're still going to need fossil fuel solutions." Shell is also developing first generation biofuels and investing heavily in second generation biofuels – deriving energy from waste.

### **Energy security a hot topic for the U.K.**

According to Sam Laidlaw, CEO of Centrica, the major domestic energy supplier in the U.K., energy security is a hot topic globally although countries approach it differently depending on whether they are importers or exporters. "It used to be a bigger issue for the U.S. but the advent of domestic supplies of shale gas now makes it less important. But in the U.K., energy security will become an increasingly important issue as gas production is declining very rapidly."

Over the next decade, a third of the U.K.'s existing power stations will be retired and Laidlaw believes that what will replace those ageing plants is a big issue for the government. He predicts there will be an increasing dependency on gas as well as renewables and nuclear which are expensive but help with carbon objectives. "We need a mix. Some more wind and you need gas to back up the wind because wind is intermittent. Additionally, you need new nuclear as a minimum to replace the old nuclear stations being retired," he argues.

### **Reforming energy markets**

Alistair Buchanan, Group CEO of the U.K. energy regulator OFGEM, agrees that the investment

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environment for U.K. energy companies is difficult and that could have a detrimental effect on energy security. "They're still operating in an incredibly tight capital market environment with major utilities carrying full and difficult balance sheets. So we're looking at a very difficult financing market, substantial technical challenges, and significant planning issues across Europe. That has led to wind, water and wave projects all being delayed - maybe quite substantially."

Can the government's electricity market reform package do enough to ensure a free flow of investment in the industry so that Britain will have enough power and meet its carbon reduction targets within the next ten years? Buchanan says more needs to be done to ensure that the pricing of many of the financial instruments used to trade long-term energy contracts are clear and transparent enough to encourage investment. "In the wholesale market, which the U.K. government is changing, you need a price to be able to strike that bilateral contract and you only get a price when there is an active market. We have had to tell the government that there isn't an active market at the moment," he says.

### **Gas back on energy agenda**

He acknowledges that the government has moved quickly to set up an effective investment framework, but still more needs to be done to cope with a rapidly changing energy market. "They were expecting nuclear to come online by 2017 – it won't – they were expecting clean coal, they were expecting wind. None of that is going to be in place as they expected a few years ago. Now the focus is on gas. What they're trying to do is encourage gas by having a capacity credit – or a subsidy. But they're saying on the one hand we'll have it and on the other they are saying that we won't instigate it until the end of 2015." For OFGEM that delay will put up prices and derail the energy programme. "We're saying to government if you're going down the capacity credit route for gas - then get on with it. I think the U.K. government is close to pulling off a remarkable achievement. Unfortunately if it just gets some of the details wrong it is not going to see the arrival of that critical energy investment of £110 billion within the next 8 years." For Alistair Buchanan, one of the biggest risks to the U.K.'s energy security is the fact that if clean energy doesn't attract enough investment, then those vital parts of the future energy mix that will keep the lights on in the U.K., will simply not be up to scale. "Frankly, compared with where we were two years ago I am wildly optimistic. My worry is that I could become wildly pessimistic quite quickly if some decisions are incorrect over the next few months."

*The INSEAD Energy Network conference was sponsored by Accenture.*

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