



Supporters of Nuclear Energy

Newsletter

No 215

August 2016

WAITING WITH BATED BREATH

The expression “waiting with bated breath” has two meanings - someone anticipating something attractive happening in the near future and someone fearing the worst. Either of them could apply to the situation we find ourselves in as we wait to hear what Prime Minister Theresa May has decided to do about the Hinkley Point C project and speculate about the likely reactions of the Chinese and French Governments to that decision, whichever way it goes. All this uncertainty has damaged public support for nuclear energy in the UK, threatened to disrupt international relations and markets, led to a spurt of interest in various nuclear options separate from the large-scale power station projects and put the wind behind the sails of those promoting the so-called renewables.

The idea behind the saying “with bated breath” is that the anxiety or excitement experienced while waiting for something to happen is so great that you almost stop breathing. I suspect that only those directly responsible for the Hinkley scheme are in danger of fainting from a shortage of oxygen after waiting for years for something to be decided and surviving several false dawns. Any decision may well turn out not to be the final word anyway, like the Brexit referendum result, which is still being debated.

The original meaning of the saying “with bated breath” was used by Shylock in William Shakespeare’s “The Merchant of Venice “ as a taunting piece of sarcasm and scorn. After criticising Shylock for charging interest on loans - spitting at him, calling him a cur and kicking him around the streets of Venice - Antonio, the merchant of the play’s title, is forced to seek a loan from him. Shylock responds sarcastically to the request. Is he expected to be grateful for this request for money? he asks. Should he bow down in a servile manner? Should he whisper his thanks like a chastened slave and put himself at Antonio’s disposal?

For Shylock read the Chinese, whom the UK Government led by David Cameron (and supported enthusiastically by Chancellor George Osborne) was

only too pleased to see providing a third of the cost of building Hinkley Point C and going on to take the lead in the construction of another nuclear power station at Bradwell. Then everything changed and under the leadership of Cameron's successor, Mrs. May, the real objectives of the Chinese were called into question and everything was put on hold.

It would be ironic if the Government, having reviewed the copious information which is available about the Hinkley scheme and which has been pored over inside and outside Whitehall for years decided to accept the Chinese investment only for the Chinese to withdraw the offer. The idea may seem far-fetched but nothing should surprise us after all that has happened since the Hinkley scheme was first mooted.

That being so I do hope that Prime Minister May has a Plan B and has decided what to do if the Hinkley Point C scheme is kicked into touch, either by the Chinese, the French or even her own Cabinet. One line of thought is that the UK already has a secret Plan B and will try to renegotiate the Hinkley deal with EDF and the Chinese, fully expecting that the French company's delicate financial situation will force it to abandon the scheme.

That would clear the way for the UK to invite Hitachi to expand its existing plans to build two new reactors in Britain. adding to the 2,700 Megawatt power station planned for Wylfa Newydd and using reactors with more of a track record than the French EPR reactors intended for Hinkley. It all sounds too Machiavellian and unlikely to me, but who knows...

The French, who probably have most to lose, have mixed feelings about the Hinkley Point C venture, whatever EDF says publicly, and the Chinese are sounding increasingly fed up with the idea of trying to break into the UK market as a partner of the State-owned French company in face of the UK Government's apparent distrust and hostility.

French anxiety largely relates to the uncertain cost of the EPR reactors and the technical problems experienced with similar reactors under construction at Flamanville in France and in Finland if not in China. EDF has also faced fierce opposition to Hinkley going ahead from the French trade unions and genuine concern among some of the company's senior managers about the impact which this extremely expensive project might have on their employer's fragile financial condition.

PERFIDIOUS ALBION

Relationships within EDF have become very fraught and I am not at all convinced that they will improve as a result of the Hinkley Point decision. Some of the workforce will almost certainly follow the "perfidious albion"

line of argument that the British (or possibly just the English) are acting out of self-interest as usual so any decision by them, for or against, must by definition be to the disadvantage of France and EDF.

The extent of the bad feeling between the EDF Board and some trade unions was in evidence early this month when the company's Central Works Council requested the High Court in Paris to suspend the final investment decision (FID) for the Hinkley plant which the Board had just taken.

The Works Council submitted the request to the Court on 28 July, the same day as the EDF Board of Directors agreed to go ahead with the £18 billion project to construct two EPR reactors at Hinkley Point in Somerset. The Court rejected the Council's request but the damage was done and ill-feeling is still simmering.

The situation has not been helped by a follow-up announcement by the EDF Board that its Chairman and Chief Executive Officer, Jean-Bernard Levy, planned to take legal action against one of the unions, the Sud Energie union. The union has claimed that M. Levy knew very well that the UK Government planned to carry out a further review of the Hinkley Point C scheme before the EDF Board agreed to go ahead with the project but had kept quiet about it. This has been denied by M. Levy, although it is not clear at the time of writing whether his threatened legal action will proceed.

A ROBUST EDF DEFENCE

A typically robust defence of the Hinkley Point C project came from Vincent de Rivaz, chief executive officer of EDF Energy, in an article written for the Sunday Telegraph at the end of the month in which he made some important points. I do wish he had not tried to deal with what is probably the most important concern, however. If Hinkley went ahead would China be in a position to close down a significant part of the UK's electricity supply system if the two countries fell out over broader diplomatic issues?

Mr. de Rivaz's response to that is to say that having worked with the China General Nuclear Power Corporation (CGN) on two new build projects in China involving EPR reactors similar to those planned for Hinkley and benefited from the relationship EDF knows and trusts its Chinese partners. I think it was Mandy Rice Davies who famously said during the Profumo scandal: "Well, he would say that wouldn't he."

Mr. de Rivaz argues that the UK independent nuclear regulator only granted Hinkley Point C a nuclear site licence after being satisfied that security has been properly addressed. "All staff on nuclear projects are vigorously vetted,

wherever they come from. As is standard practice, the control systems at Hinkley Point C will be isolated from IT systems and the internet,” he said.

I am sure all that is true but it is not physical security which is being scrutinised. It is the wider issue of whether it would be wise to allow the Chinese to control or be in a position to influence a key component of the UK’s electricity supply system. There has been media speculation that the security services are concerned that technology could be compromised if the Chinese gained access to data that might be important to the nation’s defence and that is a serious matter, to be taken seriously.

As a former Home Secretary the Prime Minister will have more knowledge of what the security services see as the dangers than Mr. de Rivaz has. In the circumstances it would have been wise for him to leave very sensitive political and diplomatic issues alone and concentrate solely on some very positive arguments in favour of Hinkley going ahead. Here are a few of them.

- * The cost of Hinkley’s electricity should not be compared with today’s depressed wholesale prices but future prices. Hinkley is competitive with all other future energy options, including gas (the Government’s favourite fossil fuel) when the cost of carbon is taken into account.
- * Even with the hopes for UK shale, falling North Sea production means gas needs to be imported, adding billions to the trade gap.
- * Wind has a critical role to play in the energy future, but we will always need back-up power when the wind doesn’t blow. That extra cost is paid for by customers and is around £10 per Megawatt hour.
- * Peak electricity demand is in the winter when there is almost no solar electricity being generated. There is no prospect of cost effective battery technology being developed any time soon to store electricity for months at a time and nor is the electricity going into batteries free.
- * Small modular reactors are worth developing but as of now no one can know how long it will take for policymakers, regulators and planners to approve these designs or what they will cost nor how communities will react to dozens of nuclear power stations being built at new locations.

One thing is certain. The UK needs a reliable, safe and economic electricity supply at least as much as the French and Chinese need the Hinkley business - and the sooner the supply situation is improved the better. As my predecessor as SONE Secretary, Sir Bernard Ingham, once said: “Britain did not become Great Britain by not using energy.”

CRITICAL CAPTAINS OF INDUSTRY

The Institute of Directors (IoD), sometimes referred to irreverently as the bosses trade union, is certainly worried about the prospects for energy supply in the UK. Even though it supports Theresa May's decision to review the £18 billion Hinkley Point C scheme it castigates successive Governments for failing to deliver energy security.

An opinion poll carried out by the IoD showed that although its members broadly support nuclear energy they are not at all impressed by what is going on at present.

Only 9% of the 1,000 members surveyed "strongly agreed" that the proposed new reactors at Hinkley Point C would make Britain more economically competitive and fewer than a fifth believed that Hinkley would make the UK more strategically secure.

"The IoD backs nuclear as a reliable source of low carbon energy, but each project has to make economic sense," Dan Lewis, senior infrastructure policy adviser at the IoD, said. "But given the costs, the Government is right to take one final look before signing off." Nevertheless, Mr. Lewis criticised ministers of all parties for focusing on reducing carbon emissions but underplaying the other two "crucial aims of energy policy," delivering secure and affordable power.

"Government policy at the moment is creating all sorts of bizarre outcomes," he said. "Instead of accelerating moves to safely frack for gas and oil in the UK we are importing coal and oil from Russia and gas and oil from Norway, with the extra costs and emissions that involves.

"Instead of building cleaner gas plants to meet demand when renewables can't, the Government has been subsidising more polluting diesel-fired plants."

It came as something of a surprise to me that the IoD's opinion poll figures indicated that three quarters of its members supported action to counter climate change which included strong backing for solar, wind and even tidal power.

Despite Mr. Lewis's call for fracking exploration to be speeded up the IoD's members are split over shale exploration, with only 53% strongly or somewhat in favour and nearly 30% strongly or somewhat opposed. That is no better than the figures relating to the use of the renewables. A very high 53% of the IoD's members strongly supported solar arrays, with 45% in favour of offshore wind and 57% backing wave and tidal power, neither of which have been tested at scale in the UK.

The IoD is right to be concerned about energy security. Power shortages this winter are, I am afraid, looking a real possibility as schemes aimed at

persuading industries to stop using energy at key times are abandoned. It was announced this month that plans to help keep the lights on this winter by paying big businesses to cut power usage on weekday evenings have been scrapped after the National Grid failed to find enough support for the idea.

The National Grid was seeking businesses which could cut demand by a total of 177 Megawatts (MW) through the scheme, which was used last winter when power plants broke down, but it will not proceed this year after finding that “minimal volume could be available.” It received offers totalling only 30 MW, less than 20 percent of what it wanted, from companies willing to take part in the planned scheme between 5pm and 6pm in the evening when demand is usually at its peak.

BRING ON THE OLD

Not to worry though. The National Grid is insisting that the scheme’s failure will not affect continuity of supply as it had already secured extra generating capacity by way of a separate last resort scheme. This involves paying generators to keep old power stations open on a standby basis. Older plant, used intermittently, is surely more likely to break down so the Grid operators must be keeping their fingers crossed.

Getting it wrong can be costly. National Grid faces an £18 million bill over emergency plans put in place last winter. It paid £113m to the Drax and Fiddler’s Ferry coal-fired power station operators for so-called black-start services, ensuring they could restart themselves independently if there was a catastrophic power cut. Drax was considering mothballing some of its units and Fiddler’s Ferry faced closure, which would have affected black-start capability. So National Grid decided to pay to keep them open.

It applied to Ofgem, the electricity watchdog, to recoup the costs but was told it could only get £95 million back. Ofgem ruled that the National Grid should have realised that mothballing was a possibility at Drax when the black-start contract was agreed.

The situation would be even worse this winter if the UK found that it could not rely on energy imports for any reason. The Office for National Statistics (ONS) has just pointed out that the UK’s reliance on energy imports is at its highest level since the energy crisis of the late 1970s, raising serious questions over where the UK gets its energy from and what a growing dependence on foreign energy means for bills and security. Russia has never been slow to use energy supplies, especially through gas pipe lines, as a political lever and now there are fears that the Chinese might do the same.

A form of mild sinophobia (anti-Chinese sentiment) seems to be following hard on the heels of the UK Government's concerns about what China is trying to achieve with its plans to get into the UK's nuclear energy business. The Daily Mail carried a headline this month stating: "It's terrifying that, bit by bit, China's stealthily getting its hands on our energy supply," splashed over a well-argued piece by the paper's City Editor, Alex Brummer.

This time the concern is over the involvement of the China National Offshore Oil Corporation in North Sea oil exploration and production, The Chinese are estimated to be responsible for the extraction of up to 200,000 barrels of oil a day, or up to 10 percent of North Sea output, through investment in North Sea oil drillers.

A CASE OF MILD SINOPHOBIA

The problem with sinophobia of this kind is that it might lead to retaliation, a form of anglophobia and China is a very important market, the world's second largest economy as a proportion of global Gross Domestic Product (GDP).

The company has become the UK's second largest trading partner and Britain is one of the key destinations for Chinese companies seeking to invest overseas. Over the past five years such companies have invested more in the UK than in Germany, France and Italy combined, as the Chinese ambassador to Britain, Liu Xiaoming, has pointed out.

He came in for some stick from the UK media for having the temerity to point out the obvious - mutual trust between nations is important and, like it or not, there is a severe risk of British-Sino relations being damaged if the Hinkley project is abandoned by the UK. That is not to say that I want to see the Government approving the scheme simply to placate the Chinese but it does mean that it is time to tread carefully.

WHEN THE WIND BLOWS

Imports accounted for around 40 percent of UK energy supplies last year and the country is more dependent on foreign sources than it has been for 30 years. The largest energy imports are crude oil, natural gas and petroleum products such as petrol and diesel. Putting concerns about the Chinese getting involved to one side, North Sea oil and gas production is falling anyway, which means that the country's dependence on imports will increase.

Fracking for oil and gas in the UK would help the situation, but progress is painfully slow. An early introduction of nuclear energy plants would help, too, but the larger new build schemes seem to go back far too regularly. That leaves us with the renewables or nuclear power stations which can be built relatively quickly, such as the Small and Medium Reactors (SMRs).

There has been progress of a sort in the renewables sector, albeit with systems which are for the most part producing electricity intermittently or at the wrong times of the day, requiring back-up supplies of nuclear power or the fossil fuels we are trying to get rid of. The carbon contribution of gas seems to be conveniently forgotten at the moment, as Mr. de Rivaz pointed out.

In 2003 renewable energy made up less than 2% of the UK's total energy use. Since then there has been very rapid development, with heavily subsidised wind turbines and solar panels springing up all over the country and coastal waters. According to the ONC they contribute around 10% of total energy and 25% of electricity, slightly more than the 22% contribution made by nuclear energy. The Government's official target is to meet 20% of the UK's total energy demand from renewable sources by 2020, which translates into a 30% target for electricity generation

In summary, wind, gas and nuclear energy (in whatever form) are all going to be needed and needed soon. The extent of the requirement will be better known when the Hinkley Point C decision is finally out of the way.

Professor Wade Allison is the speaker at this year's SONE annual meeting, to be held at the Institution of Civil Engineers, Great George Street, London SW1 on Monday October 24th at 2pm. This is the theme of his talk:

**NUCLEAR ENERGY SHOULD BE SAFE, ACCEPTABLE AND CHEAP :
WHY THAT IS SO, WHAT HAS GONE WRONG AND WHAT SHOULD
BE DONE**

Wade Allison, emeritus professor of physics and Oxford and member of SONE, has spent the past ten years researching and writing two books, Radiation and Reason and Nuclear is for Life. In this talk he will explain why nuclear energy is safer than fire and always been. Unfortunately, 60 years of science-blind safety regulations, designed simply to appease the fear of nuclear weapons, have taught society a contrary view so that nuclear power plants are now over-engineered and over-priced. Young people are relatively easily reassured and initiatives to replace current international regulations have been started in the USA by an international group of professional doctors, engineers, oncologists, scientists and journalists.

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