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Media Briefing

Hinkley Point C – A Review of the Year

The so-called UK nuclear renaissance “*increasingly looks less a rebirth than an unsatisfactory assortment of stalling, disjointed projects*” according to energy Journalist Tim Probert. (1) At the end of 2014, six years after EDF Energy first announced its intention to develop Hinkley Point C, the Bristol Post says we can finally be reasonably confident the project will go ahead. (2) But the paper still expresses some doubts, because EDF Energy has yet to make the final investment decision and one of its partners, Areva, has some financial challenges: “*But in all likelihood the project will be confirmed early in the new year*”.

Not everyone would be quite so bullish. To many it feels like the project is sleep walking towards disaster. It’s just that no-one is quite sure whether the disaster will be a virtually ‘unconstructable’ power plant struggling to come into operation years late and vastly over-budget or the collapse of the whole project before it even starts.

Cambridge nuclear engineer, Tony Roulstone, recently described the type of reactor planned for Hinkley as ‘unconstructable’, and said Areva, the French company that owns the EPR design, is no longer actively selling power stations of this type. In those countries still looking to expand nuclear power, such as Saudi Arabia, China and Turkey, Areva is now pushing an alternative reactor. In China, where two EPRs are currently being constructed, the authorities have indicated that they will not use the design for future power plants. In other words, the Hinkley design is already regarded as a failure by those with most knowledge of it. (3)

The European Commissioners decided to approve subsidies reported to be up to £17.6 billion to EDF Energy in October. Doug Parr, Chief Scientist at Greenpeace calculates the subsidies to be closer to £37billion on an undiscounted basis. (4)

The Austrian Government has declared its intention to take the Commission to the European Court of Justice over the decision, (5) In the UK independent energy supplier Ecotricity is also among companies and organisations considering a legal challenge. There appears to be a groundswell of opinion among renewable energy companies and associations in Britain and Europe that something should be done. (6) This could leave the project in limbo. Legal action would take at least a year to conclude and EDF Energy would have to decide whether or not to risk proceeding with the project in the meantime in case it has to be abandoned if the legal action is successful.

And despite welcoming the Hinkley deal shadow energy minister Tom Greatrex has called on the National Audit Office to review the subsidy arrangement for the nuclear project, which means there will be uncertainty surrounding the project until at least after the General Election in May. (7) Labour

has never said that if it wins the General Election it would stop new reactor construction after Hinkley. But in writing to the National Audit Office and the public accounts committee asking them to review the subsidies and to investigate whether further concessions could be secured Labour appears to some to be threatening to unpick the deal. *The Times* said that if a future Labour government backs changes to the deal, EDF could be forced to review something that has taken more than two years to resolve. (8)

Regardless of these remaining hurdles EDF Chief Executive, Vincent De Rivaz, told the Nuclear Industry Association conference in London in early December that he expects to make the final investment decision on Hinkley in the first quarter of 2015 - in other words, before the end of March next year. (9) But remember, this is the man who said in 2009 that we would be roasting our Christmas turkeys in 2017 with electricity from the plant. (10) Then in late 2012, EDF delayed 'first concrete pour' to mid-2015, and now the plant isn't expected to open until 2023 at the earliest.

The Government, for its part, has refused to confirm that it will sign a contract with EDF allowing Hinkley C to be built before April 2015. In answer to a Parliamentary Question tabled by Caroline Lucas MP, Energy Minister Matthew Hancock gave an evasive response underlining the shaky status of the project. (11)

It is still unclear exactly who will invest in the project besides EDF. According to the Department of Energy and Climate Change (DECC) China National Nuclear Corporation (CNNC) and China General Nuclear Power Corporation (CGNPC) could take up to a combined 40% share of the equity; (China Daily most recently said the Chinese are discussing an estimated 35% stake (12)) EDF could take 45-50%, and Areva 10%, and discussions have been ongoing with other interested parties – possibly the Saudis (13) and Qataris (14) - who might take 10-15%. Building Magazine claimed that reports the Saudis might be interested in investing are untrue. (15)

Nick Butler, writing in the *Financial Times*, questioned whether French reactor vendor, Areva, which is in deep financial trouble, would be able to fund its 10% share? (16) Standard & Poor's ratings agency has downgraded the company's long-term and short-term debt to BB+ from BBB-, with a negative outlook, citing uncertainty about cash flows and recovery. (17)

The UK's nuclear future could be cast into doubt by the financial crisis at Areva, according to the *Business Green* website. The French engineering company saw its shares drop by nearly 25%, after directors suspended future profit predictions because of problems at a project similar to Hinkley at Olkiluoto in Finland. The Government is reportedly so worried that Hinkley will be delayed it has commissioned a "secret review" into the project. The probe, being led by the Treasury, is said to be examining whether the 2023 completion date is likely to be met and is apparently costing "tens of millions of pounds". The outcome of the investigation is expected at the end of the year, which *The Times* says is why EDF delayed taking a final investment decision this summer until January or February. (18)

But de Rivaz insists Areva's financial difficulties will not derail the project. He said the French government, which is Areva's majority shareholder, had agreed to support the company. (19)

A reactor of the same EPR-design as Hinkley which is being built at Flamanville in Normandy is now 5 years late, and another being built at Olkiluoto 3 in Finland is expected to be 9 years late. (20) Flamanville was originally expected to cost €3.3 billion in 2005 but this has now escalated to at least €8.5 billion. (21) Similarly Olkiluoto 3 was originally expected to cost just over €3 billion, but Areva said in late 2012 that the overall cost could end up closer to €8.5 billion. (22)

Steve Thomas, professor of energy policy at the University of Greenwich, London, says the Hinkley project "...is at very serious risk of collapse at the moment. Only four of those reactors have ever been ordered. Two of them are in Europe, and both of those are about three times over budget. One is

about five or six years late and the other is nine years late. Two more are in China and are doing a bit better, but are also running late.” (23)

De Rivaz insists that delays and cost overruns at Flamanville will not impact financially on Hinkley, but he admitted that the delays were a setback. (24)

Tim Probert says the investment decision will hinge on the level of investment from the Chinese CGNPC and CNNC. He says industry participants are not as sure as DECC that the two Chinese state nuclear firms will want to take the full 40% combined stake. In many respects the Chinese have already got what they really want, which is an agreement to have a controlling interest in UK nuclear plants in order to export to us their own reactor technology. In June, David Cameron signed an agreement with Chinese premier Li Keqiang that paved the way for the Chinese to build such a plant, possibly at Bradwell in Essex.

Probert quotes Steve Kidd, former Deputy Director-General of the World Nuclear Association and a frequent visitor to China who says *“Both Chinese companies are concerned by the extremely high cost of Hinkley Point C.”* Forty per cent of £16 billion is more than \$10 billion, which is a lot of money even for the Chinese. But if the price really has gone up to £24.5 billion, (25) as suggested by the European Commission, then 40% is more than \$15 billion.

Kidd says what the Chinese want is a foot in the door in the UK and to be able to build a reactor of their choice in a project of their choice, rather than being actively involved in the construction of Hinkley Point C, so there is nothing magical about taking a 40% share. If China doesn't invest 40% then who will fill the gap?

According to *The Times* the Chinese are demanding that their own manufacturers are handed a big slice of the contracts for Hinkley. This demand for a share of the supply contracts has thrown the talks into disarray. EDF is planning to use its existing supply chain in France for the project and has told British companies hoping to win contracts to team up with French suppliers. (26)

Simon Taylor, professor and director of the Master of Finance program at the University of Cambridge's Judge Business School sees Hinkley as a "test case" for Chinese infrastructure investment in developed nations. The UK, with its well-developed legal system of contracts and openness to foreign investment, fits well with the risk appetite of Chinese companies, he says. *"If Hinkley Point C does go ahead, it will be a landmark in China's infrastructure investment abroad. It would be starting with the most difficult case that is extremely long-term, technologically complex and controversial."* If Chinese companies can handle a project like that, they will have the confidence and experience to undertake other infrastructure projects in the UK and beyond. In turn, other developed nations may be more open to Chinese infrastructure investment. (27)

According to Building Magazine Chinese Construction Consultants who have built the same type of nuclear reactors at Taishan in China could be brought in to help on the Hinkley project, but it is unlikely that Chinese manufacturers would be able to share in equipment supply contracts because of the high level of regulatory checks in the UK required to work in the nuclear sector. (28)

EDF itself does not have a bottomless pit of cash at its disposal to invest in new nuclear plants. France's nuclear power plants commissioned in the 1970s and early 1980s are approaching the end of their 40-year design life. A report published by the French government in June stated that EDF would need to invest €110 billion from 2011 to 2033 to prolong reactors beyond 40 years, while a recent state audit revealed EDF's nuclear power costs rose to 59.8 euro/MWh in 2013, up 21 per cent from 49.6 euro/MWh in 2011.

We might not have much of a coherent energy policy, but we do at least have the honour of breaking the record for the most expensive object ever built says Peter Atherton of Liberum Capital, now that the cost of Hinkley is up to £24 billion. *"I've looked online to see if there was a more expensive object*

ever built but I couldn't find one" says Atherton. "The most expensive bridge was something like £6 billion and the most expensive building something like £5 billion." The cost of the electricity to the British consumer will be 64% more than that of a French nuclear power station. (29)

Meanwhile a new report from Forum for the Future, Nottingham Trent University and Farmers' Weekly estimates that UK farms could have a generating capacity of 20GW by 2020 compared with Hinkley's 3.2GW capacity which won't be available until 2023 at the very earliest. (30) Now former Government Chief Scientist, Professor Sir David King who was instrumental in persuading Tony Blair to ditch the 2003 Energy White Paper, which argued against supporting nuclear power and go for new reactors now says we might be able to do without them if we can develop energy storage. (31) He obviously knows a dead horse when he sees one.

On 8th October 2014 following the European Commission's decision to approve subsidies to Hinkley, Allan Jeffery a spokesperson for the Stop Hinkley Campaign appealed to EDF Energy and the UK Government to examine in detail the flurry of recent reports from investment and energy analysts predicting a bright future for solar energy and other renewables as well as energy storage. (32)

"The technology proposed for Hinkley Point C is well past its sell-by-date. It's time for Somerset to look to the future and develop a locally-controlled sustainable energy industry which doesn't involve leaving a toxic legacy for our grandchildren's children and which can tackle climate change and fuel poverty in a much more cost effective way."

The reports highlighted by the group suggest that the old centralised utility model is becoming increasingly redundant and decentralised energy supply will become increasingly important in the future.

Former Labour MP Alan Simpson says the place which scares the Big 6 energy companies the most is Germany. Already, 50 per cent of Germany's electricity generating capacity comes from renewables. But big energy companies only own about 5 per cent of this generating capacity 95% is owned by farmers, small businesses, local authorities, community co-operatives and individuals. Overall 50% is owned by citizens. And now local authorities are beginning to take back control of the grid to help this energy revolution along. (33)

The question for 2015 is will South-west England join the renewables revolution or will it struggle on with redundant technology?

Stop Hinkley Contacts:

Roy Pumfrey, email roy@stophinkley.org phone 01278 652089 mob 07886028910

Allan Jeffery email ajjeffery@talktalk.net phone 01278 425451 mob 07964376266

Richard Carder email richard@stophinkley.org phone 01225 313531

Theo Simon email mrludd@icloud.com phone 01749 860767 mob 07455325961

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