Development of the British model of support to nuclear power

European Anti Nuclear Forum
Prague, 29 April 2014

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Introduction

- If Britain had known when the nuclear revival was announced (2006) what would be needed to build new nuclear, policy would have collapsed. Deal is so expensive, only Hinkley will be built, not 10 units forecast.

- Liberum Capital: 'On a leveraged basis we expect EDF to earn a Return on Equity (ROE) well in excess of 20% and possibly as high as 35%.' And 'the UK government is taking a massive bet that fossil fuel prices will be extremely high in the future. If that bet proves to be wrong then this contract will look economically insane when Hinkley Point C commissions. We are frankly staggered that the UK government thinks it is appropriate to take such a bet and under-write the economics of any power station that costs £5m per MW and takes 9 years to build.'

- Actually, it is not only a risky and expensive deal for consumers, it is a risky deal for EDF, that it would probably prefer not to do.
Outline

- What were we promised and what will we get?
- The deal
- Will it be blocked by the Commission
- Relevance to other EU member states
<table>
<thead>
<tr>
<th>What were we promised? What will we get?</th>
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<tr>
<td>No subsidies: would compete in the market on equal terms with all other sources</td>
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<td>Competitive with gas-fired generation generating at £31-44/MWh</td>
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<td>Construction cost £2bn per reactor</td>
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<td>Contract for 35 years with unknown price escalators and government loan guarantees. Not even a call for tenders</td>
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<td>Most expensive power on the system, £92.5/MWh, double wholesale electricity cost</td>
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<td>Construction cost £8bn per reactor</td>
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What were we promised? What will we get?

First power 2017

- Competition between developers and between technologies
- 10 reactors, capacity 16GW
- Proven reactor design with operating experience in France & Finland

First power 2023 at earliest

- 'Hobson’s' choice of EDF + European Pressurised Water Reactor
- 0-2 reactors, capacity 0-3.2GW
- Design with no operating experience and appalling construction record
The deal

- Two EPRs, each 1600MW to be built at Hinkley Point by 2023, where a retired 'Magnox' plant & an operating AGR plant are (retired 2023)

- Contract to be signed by NNB Genco & a new government-owned body

- NNB Genco is: EDF 45-50%, CGN & CNNC (China) 40%, Areva 10%. Discussions taking place with other interested parties who could take up to 15%. So EDF share could be only 35%

- All power produced sold for 35 yrs at price set by a formula in contract

- Government loan guarantees for about 70% of expected cost. Effectively means NNB Genco borrowing from UK government at very low cost
The deal

- **Starting price €111/MWh, falling to €107/MWh if two further units built at Sizewell**

- **Price indexed to general inflation and provision for operating cost increases to be passed through. EDF claims construction cost risk to be borne by them**

- **Contract for difference is a simple mechanism to pay the difference between the contract price and the market price**

- **Price based on construction cost of £16bn (€19.2bn - €6000/kW) & an expected rate of return to NNB Genco of 10%**
Construction cost

- 2 weeks before, CEO of EDF said cost would be £14bn but the deal was for £16bn

- EDF claimed: ‘the project and its partners will have incurred £2bn of other costs before first operation. These include land purchases, achieving the different consents, construction of a spent fuel storage facility and preparing the 900 strong team which will run the station.’

- These costs were known about long before the deal was announced so misleading to only acknowledge them on the day of the deal

- Far from clear how factors such as staff training and land acquisition could amount to anything close to £2bn so there must be suspicions they are to cover some other costs or to make the project more profitable.
Construction time

- Commercial operation not expected before 2023. EDF claimed construction time would be 5-6 years

- So either construction will not start till 2017/18 or construction expected to take 8 years

- If construction does not start till 2017/18, agreed terms will have to be renegotiated to reflect prices of the day

- Even if construction starts 2015, terms might still have to be renegotiated
The State aid inquiry

- Contract illegal if it is judged illegal state aid. 3 tests

- Is it state aid? Yes, there is a benefit, it is given by a state undertaking & provided by the state (consumers)

- Does it distort markets? Yes, it favours certain undertakings or production of certain goods. It is liable to distort competition & affect trade between Member States

- Is there an applicable exemption from state aid rules? Renewables exempt from state aid rules but nuclear is not

- But 11 other member states inc Czech Rep want option of state-backed CfDs so significant precedent. Full-scale investigation would take years
The state-aid inquiry

- Proposed Hinkley contract notified to Commission and 18 Dec 2013, Commission decided to undertake investigation

- 'Back-end provisions – waste disposal, decommissioning etc, have to be notified separately for clearance under state-aid rules

- Inquiries could take up to 18 months
Commission’s initial views (i)

- [Link](http://ec.europa.eu/competition/state_aid/cases/251157/251157_1507977_35_2.pdf)

- ‘It appears difficult to argue that the measure can help the UK achieve security of supply, given that the plant will not be operational before 2023 (assuming the Investment Contract is concluded in 2013 and no delay occurs in the construction,)’

- ‘The measure, moreover, could hardly be argued to contribute to affordability - at least at current prices, when it will instead and most likely contribute to an increase in retail prices’

- ‘The Commission considers at this stage that the Investment Contract does not represent a sufficiently specified entrustment act, given that many of the most important terms have not yet been agreed between NNBG and the UK government - including on timing and on the obligations to which NNBG commits’

- ‘On the basis of those elements, the Commission concludes that the information provided by the UK authorities is not sufficient to demonstrate that the fourth Altmark criteria is complied with’

- Etc, etc
Commission’s initial views (ii)

- The Commission therefore is not clear at this stage on whether the notified measure can be argued to be aimed at a common EU objective in terms of environmental protection in general, and decarbonisation in particular.
- The Commission notes that such diversity would seem to be, again, ensured also in a 'business as usual' scenario and without the introduction of CfDs for nuclear energy.
- It is not clear that the current legal framework, or the characteristics of nuclear energy, result in a market failure. The Commission has doubts on whether the aid addresses a market failure related to electricity generation or to a specific market failure related to nuclear energy.
- The Commission questions whether the aid is necessary to achieve the objectives which the UK is pursuing.
- For these reasons, the Commission has doubts on whether the instruments chosen are appropriate, in particular when they are used together.
- Based on the information above, the Commission cannot exclude that the credit guarantee will involve the provision of aid, and that such aid might not be proportionate to the objectives being sought.
- The Commission cannot at this stage conclude that the CfD is a proportionate measure.
Relevance to other Member States

- 12 EU members meet regularly to discuss nuclear power: UK, Poland, Bulgaria, Czech Rep, Finland, France, Hungary, Lithuania, Netherlands, Romania, Slovakia, Spain

- March 2013: ‘On financing models, a number of potential approaches were noted including Capacity Mechanisms and Contracts for Difference, with many countries highlighting the importance of a technology-neutral approach. A number of countries noted that they would continue to closely follow developments in the UK’s Electricity Market Reform process in order to assess the applicability of this approach to their own countries. The UK highlighted the EU state aid regime as one area in which the Commission could help to ensure a level playing-field for investment in low carbon technology. It was noted that the Commission planned to reform the state aid guidelines in the coming year, and that there was therefore the opportunity for a reference to nuclear to be included in order to ensure a technology-neutral approach to support for low-carbon generation’

- ‘The Czech Republic will now take over the informal presidency of the network, and plan to host the next meeting in the autumn following the European Nuclear Energy Forum in Prague on 30-31 May [2013].’
Conclusions

- Government will do all it can to force through Hinkley but costs so high programme will then be quietly forgotten - cf Thatcher’s programme (1979) of 1 reactor order/year for 10 years which led to 1 order

- Hinkley represents a serious failure of the policy process. It has got this far because politicians are too arrogant to admit they were wrong. Parliament, public, media and civil service failed in their duty of scrutiny

- The public was repeatedly misled (lied to) by government and the nuclear industry about the costs and commercial viability

- But terms agreed are what is needed to persuade financiers to finance new nuclear. Nuclear is only financially viable if consumers and/or taxpayers bear all the risk
Conclusions

- The Commission may reject the case or place conditions (eg contract length) that will make the deal non-viable.
- If the Commission allows the deal, it might open the door to other very expensive nuclear programmes in other member states.
- Consumers pay for this but bigger cost, opportunity cost of not pursuing options like renewables & energy efficiency that meet goals on cost, reliability & environmental quality.