

Will EDF agree to finance Hinkley Point nuclear plant?

This Wednesday, 27 January, the Board of EDF is expected to decide whether to take a final investment decision on funding the controversial new nuclear plant at Hinkley Point¹. It has been a very long time coming, including promises Hinkley Point C would be cooking Christmas dinners in the UK next year². However it is still a long way from certain that a decision to go ahead will occur: EDF have some very substantial problems which calls their financial health into question.

Summary

- EDF's possible decision to invest in the Hinkley Point project faces opposition from its own management and employees over costs, risks and deliverability
- EDF share price has plummeted over the last year raising questions over how it can finance the project. Ratings agencies threaten a further downgrade if EDF proceed with Hinkley.
- The original French rationale for the project, to 'showcase' the EPR, has now disappeared as if built at Hinkley it will be the last.
- The French Nuclear Safety Authority regulator is unhappy with EDF/AREVA performance highlighting significant costs for repair and life extension for French nuclear reactors
- The Hinkley reactor type, the EPR, has not yet been shown to work, and every project in Europe and China is facing huge cost over-runs and delays

EDF in trouble

EDF's share price has tumbled questioning whether it has the borrowing power to finance the plant. It has fallen over 50% over the past 12 months³, leading to its ejection from the top tier of the French stock market⁴. Although EDF is 84% owned by the French government, Energy analyst Chris Goodall⁵ and the management union now calculate⁶ that its stock market capitalisation is less than the cost of the Hinkley plant. Two of the world's biggest credit agencies have warned EDF it will face a further credit downgrade if it proceeds with Hinkley⁷. Another call on the EDF balance sheet is the need to take over the failing (also state owned) nuclear reactor maker AREVA⁸. It has got into trouble over the costs of delivering the Okiluoto reactor in Finland (see below). EDF had been hoping that the Finnish Government would take on some of the cost over-runs, but this seems unlikely⁹. The full takeover of AREVA is also expected to be on the Board meeting agenda for 27 January.

Away from its financial health, EDF has some pressing and expensive operational matters. The key ones being the life extension of its 58 reactors in France estimated to cost about €55bn, and the additional nuclear waste costs it will need to cover, as the French nuclear waste agency said costs

¹ <http://blueandgreentomorrow.com/2016/01/14/reckless-edfs-survival-threatened-by-hinkley-point-c/>

² <http://www.telegraph.co.uk/news/earth/energy/nuclearpower/11404344/Hinkley-Point-new-nuclear-power-plant-the-story-so-far.html>

³ From figures in <http://www.boursier.com/actions/actualites/news/edf-panique-a-bord-671561.html?fil23>

⁴ <http://www.ft.com/cms/s/0/6f0c3056-b3a4-11e5-b147-e5e5bba42e51.html#axzz3xyswGCVv>

⁵ <https://twitter.com/ChrisGoodall2/status/690490237492051969>

⁶ <https://translate.google.com/translate?hl=en&sl=fr&u=http://www.cfe-energies.com/&prev=search>

⁷ <http://www.thetimes.co.uk/tto/business/industries/utilities/article4574734.ece>

⁸ <http://www.world-nuclear-news.org/C-EDF-agrees-to-majority-stake-in-Arevas-reactor-business-3007156.html>

⁹ <http://www.reuters.com/article/areva-edf-finland-idUSL8N1551SP>

could be €10bn higher than they had assumed¹⁰. They are also facing industrial relations issues with unions protesting at their attempts to reduce headcount in the business by 4000¹¹.

One way EDF might manage this process is to sell off other assets. Last October a €10bn sale of assets was reported¹² but earlier this month that was reported as being more like €6bn with some elements of this sell-off already looking problematic.

The European Pressurised Water Reactor (EPR)

The proposed Hinkley Point plant is an EPR. There is not a single plant of this type working in the world. There are 3 sites where EPRs are under construction and they are all in difficulty. That maybe because it just isn't a very good design, causing one engineering academic to describe it as 'unconstructable'¹³. Those 3 sites are:

- a) Olkiluoto, Finland – expected to be a decade late¹⁴ and cost €8.5bn compared to the original AREVA plan of €3bn and coming onstream in 2009¹⁵. Even this inflated cost required considerable migrant labour paid at levels well below the minimum wage in the UK.
- b) Flamanville, France – expected to be operational in 2018 (but see below) cost €10.5bn compared to the original budget of €3bn and start date of 2012¹⁶. There are also significant issues at this site because of a failure of quality control over the forging of the main reactor pressure vessel. Until these are resolved – with the possibility of a very expensive refit/upgrade, Flamanville cannot operate. The French safety regulator extended this January the timeline for decision on what EDF needs to do on this until the end of the year¹⁷. In other words there can be little definite progress on Flamanville for another 12 months. Whilst this could all be seen as merely worries about costs, the French safety regulator ASN has also been very blunt about some of the safety issues around the forgings, saying¹⁸ the safety problems “have not been found naturally by the operator's control systems. In this, it seems relatively worrying and this immediately raises the question of whether there were no other abnormalities that would not have been detected.” (rough translation). Thus detecting such problems in the UK requires oversight from the Office of Nuclear Regulation which was recently reported to be 'in meltdown' and struggling to recruit experienced staff¹⁹.
- c) Taishan, China – issues with the Chinese site are less well documented although construction delays have been acknowledged²⁰ and an HSBC report²¹ on the justification for Hinkley said that the delay was 3 years. It is not clear whether the quicker (but still delayed) build in China could

¹⁰ <http://uk.reuters.com/article/edf-nuclear-waste-idUKL8N14W2RO20160112>

¹¹ http://www.expatica.com/fr/news/country-news/Frances-EDF-to-cut-4000-jobs-unions_575057.html

¹² <http://www.ft.com/cms/s/0/fcd6a462-7578-11e5-a95a-27d368e1ddf7.html#axzz3xyswGCVv>

¹³ <http://energydesk.greenpeace.org/2014/11/20/comment-trouble-hinkleys-reactor-design/>

¹⁴ <http://www.carbonbrief.org/new-nuclear-finlands-cautionary-tale-for-the-uk>

¹⁵ <http://www.carbonbrief.org/new-nuclear-finlands-cautionary-tale-for-the-uk/>

¹⁶ <http://uk.reuters.com/article/edf-nuclear-flamanville-idUKL5N1190M820150903>

¹⁷ <http://www.reuters.com/article/edf-france-nuclear-idUSL8N1541PE>

¹⁸ <http://www.reporterre.net/La-situation-du-nucleaire-francais-inquiete-l-Autorite-de-surete>

¹⁹ <http://www.thetimes.co.uk/tto/business/industries/utilities/article4662825.ece>

²⁰ <http://www.ft.com/cms/s/0/789e5070-974a-11e5-9228-87e603d47bdc.html#axzz3xyswGCVv>

²¹ <http://www.businessgreen.com/bg/news/2420378/report-hsbc-raises-concerns-over-hinkley-point-nuclear-subsidies>

be accomplished with the higher labour conditions in Europe. Taishan reactors are also understood to have the same problems as the Flamanville plant with the safety of the pressure vessel²² as AREVA supplied both.

Hinkley Point

Major players in EDF are opposed to the Hinkley project. The managers' union CFE-CGC has warned that it puts the utility at risk²³ and have challenged the Board with 15 questions about the project on timetable, financing, legal status and industrial benefit²⁴. The second largest shareholder after the French Government have asked for it to be halted²⁵. Hinkley was originally conceived as a 'showcase' for their EPR reactor. But with the EDF CEO agreeing that the troubles at the other reactor sites are scaring off investors "the troubled European Pressurised Reactor (EPR) technology that is due to be used at Hinkley is to be ditched by EDF for future projects"²⁶. Whilst the UK Government have said the price of power for Hinkley is justified because it is 'first of a kind'²⁷, it is in practice likely to be 'last of the kind' after the poor projects elsewhere.

Investors are indeed unconvinced: for all the triumphant talk of Chinese funding of Hinkley last October during the visit from President Xi²⁸, the UK government was quietly and embarrassingly admitting that it needed to subsidise nuclear to keep the project alive²⁹. And the one third funding from China was the same as the 30-40% suggested 2 years earlier³⁰. In the absence of any real commercial investors - only state backed firms are involved – it is perhaps no surprise that it is reportedly on the National Audit Office list of infrastructure projects at risk³¹ and has only a BB rating from the EU in terms of credit risk³².

Those UK government subsidies are very substantial indeed, including not only the high proposed strike price for 35 years, but also loan guarantees, accident insurance, protection against evolution of the power system and plant curtailment, protection against wage and fuel cost inflation and socialising the costs of managing the grid with this very large development³³.

The benefit to UK of this is very unclear: the cost of onshore wind is now cheaper than the proposed

²² <https://www.dropbox.com/s/njavhw7ihvkbyeu/WISE-Paris-Fabrication-Flaws-EPR-Flamanville-Latest.pdf>

²³ <http://www.reuters.com/article/edf-britain-idUSL8N1534MY>

²⁴ <https://translate.google.com/translate?hl=en&sl=fr&u=http://www.cfe-energies.com/&prev=search>

²⁵ <http://www.theguardian.com/environment/2015/nov/13/hinkley-point-nuclear-plan-puts-survival-edf-at-risk-say-employee-shareholders>

²⁶ <http://www.telegraph.co.uk/finance/newsbysector/energy/11885334/EDF-Investors-shun-Hinkley-Point-because-they-think-it-will-go-wrong.html>

²⁷ <https://www.gov.uk/government/news/initial-agreement-reached-on-new-nuclear-power-station-at-hinkley>

²⁸ <https://www.gov.uk/government/news/hinkley-point-c-to-power-six-million-uk-homes>

²⁹ <http://www.theguardian.com/environment/damian-carrington-blog/2015/oct/22/hinkley-point-uk-energy-policy-is-now-hunkering-in-a-nuclear-bunker>

³⁰ <http://www.telegraph.co.uk/finance/newsbysector/energy/10395169/EDF-Hinkley-Point-nuclear-deal-an-overview.html>

³¹ <http://www.telegraph.co.uk/active/12083669/Over-a-third-of-major-infrastructure-projects-branded-undeliverable-or-in-doubt-report-finds.html>

³² <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=OJ:L:2015:109:TOC>

³³ <http://www.greenpeace.org.uk/newsdesk/energy/analysis/comment-why-hinkley-bad-deal-uk-consumer>

Hinkley deal, even accounting for the costs of variability³⁴ according to international analysis. And major companies in offshore wind development, Vattenfall³⁵ and Statkraft³⁶, argue that by the time Hinkley is operating – 2025 even at the EDF timetable – they will expect to be building new plants subsidy free.

Conclusion

EDF is in no fit state to finance a massive new plant. There are substantial financial uncertainties over cost, timetable and deliverability of a reactor type that has and continues to be problematic elsewhere in the world, including in EDF's own back yard in France, and has not yet been shown to work. The original rationale for EDF of 'showcasing' their new reactor has now disappeared, leaving only the political embarrassment of cancelling it to prop it up. EDF faces opposition from its management and workforce to carrying it through. Even if such a final investment decision is taken it may well be that the project falls apart because of the difficulties the EPR faces elsewhere. Meanwhile UK energy policy is in a real-world version of 'Waiting for Godot' as better long term energy options like smart grids and renewable energy are put on hold or abandoned. As the saying goes 'When in a hole, stop digging.'

³⁴ <http://energydesk.greenpeace.org/2015/08/20/analysis-do-the-uk-governments-sums-on-hinkley-and-climate-change-add-up-any-more/>

³⁵ https://uk.finance.yahoo.com/news/vattenfall-aims-build-subsidy-free-125241428.html?mc_cid=d6b5d4eed2&mc_eid=0cb11e14c9

³⁶ <https://www.energyvoice.com/other-news/91330/offshore-wind-schemes-could-be-built-without-subsidies-in-10-years/>