

No.39 April 2012

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## 1. Horizon pulls out

E.ON and RWE announced on 29<sup>th</sup> March that following a strategic review they have decided not to proceed with plans to develop their joint-venture, Horizon Nuclear Power. Instead the two German utilities will look for a buyer for Horizon. Horizon was planning to develop around 6.6GW of new nuclear capacity across two sites – one at Wylfa on the island of Anglesey in Wales and the other at Oldbury in Gloucestershire, South West England.

E.ON says in the UK, it will now focus on other strategic projects that will deliver earlier benefits, rather than the very long term and large investment new nuclear power calls for. RWE said the global economic crisis has meant that capital for major projects is at a premium and nuclear power projects are particularly large scale, with very long lead times and payback periods. The effect of the accelerated nuclear phase out in Germany, which has led to RWE adopting a number of measures, including divestments, a capital increase, efficiency enhancements and a leaner capital expenditure budget. A combination of these strategic factors, together with the significant ongoing costs of running the Horizon joint venture, has led to a situation where capital investment plans have been reviewed. Nevertheless E.ON and RWE both say they believe that for the right company Horizon remains an attractive project. (1)

Keith Allott, head of climate change at WWF-UK, said: "Despite the Government's efforts to bend over backwards to support the nuclear industry, it is now blindingly clear that the economics just don't stack up. Three major utilities have now pulled out of nuclear plans in the UK, and the only two

reactors under construction in Europe are massively over budget and behind schedule. The Government needs to wake up and smell the coffee - if it backed the renewables industry to the hilt instead of flogging the nuclear horse, then the UK could become a world leader in a sector that is already seeing massive growth." (2)

Greenpeace's policy director Doug Parr said: "The Government's energy strategy is crumbling. Not even the billions of pounds of taxpayers' money they have offered as incentives to the German and French nuclear industry are enough to make a new generation of power stations economically viable." (3)

The German Utilities decision will have a particular impact in Wales where only a few weeks a ago the Welsh Government performed a policy u-turn and decided to support of a new reactor for Wylfa. First Minister Carwyn Jones pledged support for a new nuclear power plant on Anglesey when he launched the Labour government's Energy Wales vision. (4) WWF-Cymru said that Wales has the potential to create thousands of green jobs in the renewables industry. Alun James, policy officer at WWF Cymru, said: "Just two weeks ago we called on the Welsh Government to do more to drive forward renewables, instead of pushing forward with its unfortunate change of policy to support nuclear power. We hope today's news will prompt Carwyn Jones to refocus his Government's efforts to support clean, safe and affordable renewable energy production."

UK Energy Minister Charles Hendry attempted to play down the significance of the decision, insisting: "E.ON and RWE's withdrawal is clearly very disappointing, but the partners have clearly explained that this decision was based on pressures elsewhere in their businesses and not any doubts about the role of nuclear in UK's energy future. The UK's new nuclear programme is far more than one consortia and there remains considerable interest. Plans from EDF/Centrica and Nugen are on track and Horizon's sites offer new players an excellent ready-made opportunity to enter the market." Gary Smith, of the GMB union, said the "devastating blow" now left the government's energy strategy "in tatters". (5)

The concern now is that the E.ON/RWE decision will put EDF in an alarmingly powerful position. "Effectively this puts all our eggs in one company's basket, which hugely increases EDF's negotiating power with the Government," Tony Lodge, research fellow at the Centre for Policy Studies, said. The Government could "pull this situation back from near-disaster" if it finds another partner for the Horizon project. (6) EDF's investment decision will hinge on ministers' judgment of what incentive the UK must pay to ensure EDF continues with the £10bn Hinkley project. A "contract for difference" will guarantee the power Hinkley generates receives a certain price. That price is yet to be determined.

The E.ON/RWE exit now leaves the UK Government hoping that EDF Energy will press the nuclear button. This hope could be misplaced. If the anti-nuclear Socialist Party wins next month's presidential election, industry executives fear a German-style nuclear U-turn, says *The Times*. At the very least, EDF Energy's plans are likely to be delayed. (7)

But talks are continuing to find new investors according to the BBC. Malcolm Grimston, a fellow at Chatham House, told Radio Wales that Horizon provided other investors with an "opportunity". (8) The Daily Post said a new expression of interest has already been made to the Welsh Government. The Nuclear Industry Association said they fully expected a new consortium to come forward for the "viable" project. (9) A number of investors and utilities are already said to be talking to each other about forming consortia to bid for Horizon. For some time, these potential buyers, who are geographically spread from Europe to Japan, have been looking to take stakes of 10-30 per cent in Horizon. All that has changed is whether they have the appetite to buy the whole venture. (10)

Speculation about who might be persuaded to buy Horizon and progress the idea of building new reactors at Oldbury and Wylfa seems to range across the whole global nuclear industry.

Initially *The Guardian* seemed to think that EDF was the most likely buyer. (11) But the *Daily Mail*'s *This is Money* website declared that EDF has decided it has enough on its plate with building four EPRs at Hinkley in Somerset and Sizewell in Suffolk without taking on Horizon. (12)

The Daily Mail was virtually apoplectic about the possibility that the Russian company Rosatom might be a potential buyer. The company is known to have been looking for a way into the UK for a while. (13) Under a picture of Chernobyl the right of centre daily says Government dilly-dallying has opened the floor to a bid from the Russian firm that built Chernobyl. "No one with an ounce of common sense could be entirely comfortable with that prospect."

David Stellfox writing in i-Nuclear said NuGeneration – the joint venture between Iberdrola and GDF Suez, appeared to be a potential buyer. NuGeneration has plans to build up to 3.6 GW of new nuclear plant on the Moorside site adjacent to Sellafield, but the site has been considered less desirable than sites further south, because of its long distance from large populations centres and the need for expensive new grid connections that could have to cross national park land. Moreover, a new complication with NuGen's Sellafield property has recently become public – mineral rights. Lord Egremont, who has substantial landholdings in the area of the site, has reportedly come forward to say he wants paid for his ownership of the rights to minerals under the land on which NuGeneration plans to build.

A spokesman for Iberdrola said NuGeneration is not pursuing an interest in Horizon, but a source close to the joint venture, speaking anonymously said there was a "fair chance" the consortium would take at look at what's on offer because of the complications at Sellafield. (Separately, RWE confirmed that land at Braystones and Kirkstanton in Cumbria is not part of the Horizon joint venture.) (14)

The Financial Times said sovereign wealth funds and Asian utilities are seen as possible buyers for Horizon. (15) According to the Lancashire Evening Post the Government is talking with global sovereign funds in the Middle East and Far East about buying Horizon. (16)

ITV Wales mentioned the Swedish utility, Vattenfall as a possible buyer. (17)

According to *The Express*, Toshiba/Westinghouse is considering teaming up with GDF Suez. This could mean the construction of up to six AP1000s across the two sites. GE Hitachi is also said to be interested. (18)

Of course many of the same economic forces which forced the German utilities to pull out will apply to other companies as well. People Against Wylfa B spokesman Dylan Morgan said: "Now rather than focus on the fantasy that another consortium will come in [the Government] should follow the German lead and ditch nuclear altogether." Alan Whitehead MP, a member of the House of Commons Energy and Climate Change Committee, says the idea, suggested by Energy Minister Charles Hendry in his 'whistling in the dark' statement that the 'Horizon sites offer new players an excellent chance to enter the market' is pure whimsy. There are no new players. (19)

 $(1) \ EoN\ Press\ Release\ 29^{th}\ Mar\ 2012\ http://pressreleases.eon-uk.com/blogs/eonukpressreleases/archive/2012/03/29/1802.aspx$ 

RWE Press Release 29<sup>th</sup> Mar 2012

http://www.npowermediacentre.com/Press-Releases/RWE-npower-announces-strategic-review-of-Horizon-Nuclear-Power-1137.aspx

(2) WWF 29<sup>th</sup> Mar 2012

http://www.wwf.org.uk/what\_we\_do/press\_centre/?5858/Nuclear-economics-dont-stack-up (3) Independent 29<sup>th</sup> Mar 2012 http://www.independent.co.uk/news/uk/home-news/rwe-npower-and-eon-halt-nuclear-plant-development-7600017.html

- (4) Daily Post 15th Mar 2012 http://www.dailypost.co.uk/news/north-wales-news/2012/03/15/u-turn-in-welsh-government-policy-over-wylfa-b-55578-30539187/
- (5) Telegraph 29<sup>th</sup> Mar 2012 http://www.telegraph.co.uk/earth/energy/nuclearpower/9173233/E.ON-and-RWE-scrap-UK-nuclear-power-plans.html
- (6) Telegraph 31<sup>st</sup> March 2012 http://www.telegraph.co.uk/finance/newsbysector/energy/9178093/Are-the-lights-about-to-go-out-all-over-Britain.html
- (7) Times 30<sup>th</sup> March 2012 http://www.thetimes.co.uk/tto/business/industries/utilities/article3368989.ece
- (8) BBC 30<sup>th</sup> March 2012 http://www.bbc.co.uk/news/uk-wales-north-west-wales-17552607
- (9) Daily Post 30<sup>th</sup> March 2012 http://www.dailypost.co.uk/news/north-wales-news/2012/03/30/scramble-to-find-new-wylfa-b-investor-as-rwe-and-e-on-pull-out-55578-30656169/
- (10) Independent 1<sup>st</sup> April 2012 http://www.independent.co.uk/news/business/comment/mark-letftly-why-the-sun-has-not-yet-set-on-nuclear-7605911.html
- (11) Guardian 29th Mar 2012 http://www.guardian.co.uk/environment/2012/mar/29/nuclear-reactors-rwe-eon-energy?newsfeed=true
- (12) This is Money 31<sup>st</sup> Mar 2012 http://www.thisismoney.co.uk/money/news/article-2123254/French-say-stake-Horizon-nuclear-venture-EDF-rules-taking-Germans.html
- (13) Daily Mail 31st March 2012 http://www.dailymail.co.uk/debate/article-2123342/Would-buy-reactor-firm-gave-this.html
- (14) i-Nuclear 29<sup>th</sup> March 2012 http://www.i-nuclear.com/2012/03/29/german-utilities-rwe-and-e-on-abandon-plans-to-build-new-nuclear-plants-in-uk/
- (15) FT 29<sup>th</sup> Mar 2012
- http://www.ft.com/cms/s/0/5a9f344e-798b-11e1-8fad-00144feab49a.html
- (16) Lancashire Evening Post 2<sup>nd</sup> April 2012 http://www.lep.co.uk/news/lep-business/talks-to-secure-nuclear-future-1-4409083
- (17) ITV Wales 30<sup>th</sup> Mar 2012 http://www.itv.com/news/wales/update/2012-03-30/wylfa-b-meeting-taking-place-on-anglesey/
- (18) Power Engineering 1<sup>st</sup> April 2012 http://www.power-eng.com/news/2012/04/01/toshiba-may-power-up-nuclear-reactors.html
- (19) http://alansenergyblog.wordpress.com/

# 2. Horizon Decision a blow to Westinghouse

The decision not to proceed will be a blow to Westinghouse, which had been hoping its AP1000 reactor design would be selected on the Horizon sites. A decision has been expected for the past three months. (1) Westinghouse, which owns the Springfields site, near Preston, has been battling with Areva to be selected by Horizon to build a pair of reactors at Wylfa. Trade union bosses at Springfields have warned its future could be under threat if Westinghouse miss out on the £7.5bn contract. (2)

Many in the industry had assumed Horizon would choose Westinghouse, and the Department of Energy and Climate Change (DECC) fervently hoped the Germans would do so, as it would achieve Whitehall's goal of having two suppliers, not one. But recent reports have hinted that Horizon might plump for Areva's EPR giving the French - in the short-term at least - a monopoly on new British plants. The suggestion triggered a frenzy of speculation in the nuclear industry, with suggestions that Areva may have won with a financially more attractive offer. (3)

Two of the UK's biggest unions, Prospect and Unite, have been lobbying MPs to support the "dual design" approach to nuclear new build, meaning they want Horizon Nuclear Power to choose the Westinghouse AP1000 over the Areva EPR. Prospect national secretary Mike Graham said he hopes that by lobbying MPs and other key stakeholders in the industry that the 'two technology' argument will prevail. It is vital that a second supply chain for new nuclear build in the UK is established because EDF's decision to build the EPR design at Hinkley Point and Sizewell will be heavily reliant on a French supply chain. The unions argue that the selection of the Westinghouse AP1000 for Wylfa would bring around £3 billion into the UK supply chain, generate 5,000 jobs on Anglesey, and sustain the Springfields Fuel Plant in Central Lancashire for decades, safeguarding over 1,000 jobs, apprenticeships and graduate recruitment opportunities. (4)

As we reported last month, delay in the announcement by Horizon was due at least in part to lobbying by Westinghouse, allegedly with officials from the US Embassy in tow. Westinghouse has taken legal advice over whether it would have standing to mount a challenge on European competition grounds should it lose out to Areva in the Horizon bid. (5) The row threatened to develop into a full-blown legal confrontation. (6)

- (1) Professional Engineering 29<sup>th</sup> March 2012 http://profeng.com/news/horizon-up-for-sale-as-utilities-drop-plan-to-develop-nuclear-power
- (2) Lancashire Evening Post 29<sup>th</sup> Mar 2012 http://www.lep.co.uk/news/fears-over-nuclear-plan-1-4395472
- (3) Sunday Times 11th March 2012 http://www.thesundaytimes.co.uk/sto/business/energy\_and\_environment/article990908.ece
- (4) Unite 22nd Mar 2012 http://www.unitetheunion.org/news\_\_events/latest\_news/mps\_and\_energy\_unions\_back\_dua.aspx
- (5) i-Nuclear 24th March 2012 http://www.i-nuclear.com/2012/03/24/uk-unions-press-lawmakers-to-support-ap1000-build-in-uk-under-a-dual-design-policy/
- (6) Guardian 29<sup>th</sup> Mar 2012 http://www.guardian.co.uk/environment/2012/mar/29/nuclear-reactors-rwe-eon-energy?newsfeed=true

## 3. Nuclear Investment Looking Dodgy

The appetite for investment in nuclear new build is weak because of the huge capital costs involved, and also because ratings agencies appear to view the projects as risky. (1) The view of the ratings agencies alone might not be enough to dissuade a company from investing in nuclear, but a potential ratings downgrade would give a utility considerable pause for thought. Ratings agencies such as Moody's or Standard & Poor's view nuclear as high-risk because of their limited tolerance for debt. Investment in nuclear is "a hard sell". Moody's Investors Service said RWE and E.ON's decision to abandon plans to build new nuclear power plants in the UK was "credit positive" for the two firms, but curiously it was also credit positive for EDF, which remains committed to building four Areva EPR reactors in the UK. (2)

Whether or not E.ON and RWE will find a buyer for Horizon and NuGen (Iberdrola and GDF Suez) will go ahead with building new reactors in the UK is being widely questioned.

The unfavourable attitude of the ratings agencies towards nuclear power stems largely from the scale of investment required, together with future uncertainties surrounding power prices. The risks are writ larger when you think of a nuclear project (compared with other forms of generation), because construction and planning is that much more tortuous, construction risk is higher and from an operational point of view they have a high fixed cost base. Moody's pays particular attention not only to nuclear power but to any large capital investment projects where the financial risk profile of a given utility may be affected by whether or not the project is completed on time and on budget. (3)

So, with an investment climate for new nuclear which is not good, "significant government support" will be needed in most markets, according to BNP Paribas. "Liberalized markets are not sending out the signals needed." Ratings agencies have no clear ideas on nuclear power, but they don't like it, and this will lead to greater scrutiny of nuclear investment compared with other investments. Chinese experience in building reactors, supposedly on time and budget, will "not be weighted by financial investors at all" when considering investments in new nuclear plants in Europe. (4)

Nuclear Energy is a dream that failed, according to *The Economist*. A year after Fukushima, the future for nuclear power is not bright—for reasons of cost as much as safety. For nuclear to play a greater role, either it must get cheaper or other ways of generating electricity must get more expensive. There isn't any obvious way for nuclear power to get cheaper. Proponents say small, mass-produced reactors would avoid some of the problems of today's behemoths. But for true innovation such reactors would need a large market in which to compete against each other. Such a market does not exist.

In theory, the second option looks promising: the damage done to the environment by fossil fuels is currently not paid for. But in practice carbon prices are unlikely to justify nuclear. Britain's proposed carbon floor price—the equivalent in 2020 of  $\epsilon$ 30 a tonne in 2009 prices, roughly four times the current price in Europe's carbon market—is designed to make nuclear investment enticing enough for a couple of new plants to be built. Even so, it appears that other inducements will be needed. There is little sign, as yet, that a price high enough to matter can be set and sustained anywhere. (5) Professor Steve Thomas at Greenwich University argues that even with a fixed carbon price of  $\epsilon$ 36 a tonne and a guaranteed price for electricity (as planned as part of the UK Electricity Market Reform), Britain's nuclear plans remain vulnerable. (6)

Greenpeace Executive Director, John Sauven, says even before the tragedy in Japan, major investors, such as Citigroup, were questioning the economics of nuclear new build. Now the economics look even worse. The French Audit Court concluded that the new French reactor design was too costly and could not be built in time to solve France's energy crisis. The front-runner in April's presidential election, Francois Hollande, has promised to phase out one-third of France's nuclear fleet by 2025. And as European politicians have turned increasingly against nuclear, they have started taking energy efficiency seriously. In Germany politicians plan to reduce electricity demand by 25% by 2050 through energy efficiency. But the coalition government here in Britain is planning for electricity demand to double over the same period, even though Ministers accept that energy saving is cheaper and greener than building new power stations. (7)

- (1) ICIS Heren 20<sup>th</sup> March 2012 http://www.icis.com/heren/articles/2012/03/20/9543406/power/edem/nuclear-electricity-investment-could-risk-utility-credit-ratings--analysts.html
- (2) I-Nuclear 2<sup>nd</sup> April 2012 http://www.i-nuclear.com/2012/04/02/moodys-says-german-withdrawal-credit-positive-decision-gives-edf-bargaining-power/
- (3) ICIS Heren 27<sup>th</sup> March 2012 http://www.icis.com/heren/articles/2012/03/27/9545356/power/edem/new-nuclear-electricity-costs-hit-utility-ratings---moodys.html
- (4) i-Nuclear 21st March 2012 http://www.i-nuclear.com/2012/03/21/investment-climate-not-good-govt-support-for-nuclear-needed-financial-analyst-says/
- (5) Economist 10<sup>th</sup> March 2012 http://www.economist.com/node/21549936
- (6) Economist 10th March 2012 http://www.economist.com/node/21549094
- (7) Huffington Post 9<sup>th</sup> March 2012 http://www.huffingtonpost.co.uk/john-sauven/nuclear-energy-a-fading-dream\_b\_1334976.html?ref=uk

# 4. Britain has handed over control of its energy future to the French Government (Part Two)

Tom Burke has now teamed up with three other former Friends of the Earth (FoE) Directors to tell David Cameron he is being ill advised by the Department of Energy and Climate Change (DECC) on nuclear policy. The result is that French state-owned EdF will have the UK "over a barrel" unless the government switches course immediately. The current path will see the UK pay a French state-owned company to build new nuclear plants on what is effectively a "cost-plus contract." The government is planning a litany of proposed subsidies and incentives. The environmentalists said the Conservative-Liberal Democrat coalition government's planned electricity market reforms are little more than a thinly disguised subsidy for new nuclear power generally and EDF specifically. (1)

Another one of the gang of four, Jonathan Porritt, says the "The entire energy system in the UK is about to be rigged in order to support nuclear power, through the Electricity Market Reform, at great cost to UK consumers, UK businesses and the long-term interests of the entire nation... [T]he Coalition Government's continuing pledge that any new nuclear programme will not get any additional public subsidy is now palpably dishonest".

The four say at the very least the Government should publicly set an explicit cap on the price it is prepared to make homeowners and businesses pay for nuclear electricity. "If this is too low for EDF to proceed, that is their decision. Without such an explicit red-line we run the risk of being held to ransom by EDF and the French government and boxed into a position of having to pay whatever they ask".

In a briefing note to David Cameron the former-Directors argue that the Energy Bill, which is due to be introduced in Parliament in May, will have significant implications for the future cost of electricity. It will replace our current liberalised market with one that is much more heavily planned and regulated, which will be difficult to reconcile with the Government's commitment to deregulation. (2)

The Briefing Note expresses some scepticism about whether Centrica will go-ahead with its joint investments in new nuclear with EDF. The company has a market capital of £15bn, but their share of the joint venture with EDF would amount to £5bn at least – a very large risk to carry. (3) Even EDF will be unable to finance new nuclear in Britain on its own balance sheet and will rely on an implicit guarantee from the French and UK Governments to lower its cost of capital.

The former FoE directors have now issued the first of six planned briefings entitled 'Subsidising the nuclear industry'. (4) Readers of NuClear News will be familiar with most of the arguments. However, the briefing does estimate that the Contracts for Difference Feed in Tariffs (which may be illegal under EU law) that will be introduced in the Energy Bill will provide a subsidy of £63 - £75 billion to EDF over the next 35 years – nearly £2bn per year. If all the proposed reactors are built it will cost householders and businesses around £4bn per year.

Guardian columnist George Monbiot and author Mark Lynas are among the signatories of an open letter along with Stephen Tindale, Fred Pearce, Michael Hanlon that takes issue with the letter sent to Cameron by the four former FoE Directors. (5) Porritt et al responded in a blog in *The Guardian*. (6)

- (1) i-Nuclear 13<sup>th</sup> March 2012 http://www.i-nuclear.com/2012/03/13/the-french-will-have-us-over-a-barrel-unless-uk-reverses-course-leading-environmentalists-warn/
- (2) Letter & Briefing note here. TomBurke.co.uk 13th March 2012 http://tomburke.co.uk/2012/03/13/nuclear-letter-to-david-cameron-offering-the-advice-he-isnt-getting-from-decc/
- (3) http://tomburke.co.uk/wp-content/uploads/2012/03/note to PM Nuclear power.pdf
- (4) i-Nuclear 26th Mar 2012 <a href="http://www.i-nuclear.com/2012/03/26/foe-four-publish-first-of-six-briefings-in-campaign-to-get-uk-to-abandon-new-nuclear/">http://www.i-nuclear.com/2012/03/26/foe-four-publish-first-of-six-briefings-in-campaign-to-get-uk-to-abandon-new-nuclear/</a>
- (5) Business Green 16<sup>th</sup> March 2012 http://www.businessgreen.com/bg/news/2159851/green-thinkers-hit-anti-nuclear-letter?WT.rss\_f=Wind+-+Energy&WT.rss\_a=Green+thinkers+hit+back+at+anti-nuclear+letter See Monbiot 15<sup>th</sup> March 2012 http://www.monbiot.com/2012/03/15/a-letter-to-david-cameron/ & i-Nuclear 16<sup>th</sup> March 2012 http://www.i-nuclear.com/2012/03/16/british-science-writers-tell-cameron-to-ignore-reflexive-ideological-opposition-to-nuclear/
- (6) Guardian 16<sup>th</sup> March 2012 http://www.guardian.co.uk/environment/blog/2012/mar/16/nuclear-power-fail-george-monbiot

# 5. Investing in nuclear is a major risk

According to a new report from the Energy Fair group anyone considering investing in new nuclear plants faces five major areas of risk: market risk, cost risk, subsidy risk, political risk and construction risk. (1) By the time any new nuclear plant could be built in the UK (2020 or later), the market for its electricity will be disappearing, regardless of any possible increase in the overall demand for electricity.

The tumbling cost of photovoltaics (PV) and the falling costs of other renewables, with the likely completion of the European internal market for electricity and the strengthening of the European transmission grid, means that consumers, large and small, will be empowered to generate much of

their own electricity or to buy it from anywhere in Europe - and this without the need for subsidies. Explosive growth of PV is likely to take much of the profitable peak-time market for electricity. And there will be stiff competition to fill in the gaps left by PV, from a range of other sources, many of which are better suited to the gap-filling roll than is nuclear power. A report by the European Photovoltaics Industry Association shows that, because of rapidly falling prices, photovoltaics (PV) is likely to become a competitive source of electricity in the UK by 2019, without subsidies—not just for householders paying domestic retail prices but also for wholesale generators and large commercial and industrial consumers. In sunnier countries like Spain, Italy, and Greece, PV will become competitive earlier, perhaps as soon as 2013

Apart from the risk that politicians may decide to withdraw some or all of the subsidies for nuclear power, it is vulnerable to political action arising from events like the nuclear meltdowns in Fukushima. The next nuclear disaster — and the world has been averaging one such disaster every 11 years — is likely to lead to even more decisive actions by politicians, perhaps including the closing down of nuclear plants that are still under construction or are relatively new.

The delays and cost overruns in the Olkiluoto and Flamanville nuclear projects are just recent examples of nuclear projects where actual build times and actual costs greatly exceed what was estimated at the outset. But the extraordinary complexity of nuclear power stations — which is likely to increase, after Fukushima, with the added complexity of new safety systems — means that construction risk will remain a major hazard for investors for the foreseeable future.

In general, renewables can be built much faster than nuclear power stations, they are cheaper than nuclear power (taking account of all subsidies), they provide greater security in energy supplies than nuclear power, they are substantially more effective in cutting emissions of CO2, there are more than enough to meet our needs now and for the foreseeable future, they provide diversity in energy supplies, and they are largely free of the several problems with nuclear power.

The commercial opportunities lie in renewable sources of power. They are growing fast while the numbers of operating nuclear plants in the world is falling. Renewables are, commercially, much less risky than nuclear power.

(1) The Financial Risks of Investing in New Nuclear Power Plants, Energy Fair, March 2012 http://www.mng.org.uk/gh/private/risks\_of\_nuclear\_investment\_published.pdf

#### 6. Britannia waves the rules

The Government and nuclear industry have formed a new, hitherto secret, group called the Programme Management Board (PMB) to address construction and delivery issues for new reactors. The PMB is meant to work to overcome potential pinch points and bottlenecks in the delivery of newreactors. The PMB was being promoted by UK Nuclear Industry Association (NIA) Chairman Lord Hutton, the former Labour energy secretary, and has the full support of the current Secretary of State for Energy Charles Hendry.

"The successful delivery of Hinkley Point is fundamentally important," said Hutton, according to minutes of the first meeting. Hinkley Point "will be achieved by Government and industry making decisions on common ground to support the delivery of that project, and giving confidence to the marketplace for future projects."

The Programme Management Board (PMB) was launched by the NIA last autumn and had its first meeting, so far as public records reveal, in November. The second meeting was held about three weeks ago when the Olympic Delivery Authority gave a presentation on some of the problems they faced in delivering the Olympics infrastructure. (1)

The minutes of the first meeting suggest that the energy minister, Charles Hendry, is preparing to waive the rules on admitting skilled foreign workers in order to keep the government's nuclear power programme on track. (2)

- (1) i-Nuclear 22<sup>nd</sup> March 2012 http://www.i-nuclear.com/2012/03/22/new-nuclear-delivery-focus-of-new-government-industry-forum-as-construction-approaches/
- (2) Rob Edwards 21<sup>st</sup> March 2012 http://www.robedwards.com/2012/03/waiving-the-rules-to-keep-the-nuclear-power-programme-on-course.html

#### 7. Stress Tests

Last year all nuclear operators in the EU were asked to review how their nuclear plants would respond to extreme situations. In particular operators had to check and improve mitigation measures available after a potential loss of safety functions, including the loss of electrical power or loss of ultimate heat sink for heat removal from the reactor, the management of loss of core cooling functions in their reactors as well as in spent fuel pools and the maintenance of containment integrity. The final national stress test reports were to due submitted to the European Commission and the European Nuclear Safety Regulators Group (ENSREG) by 31<sup>st</sup> December 2011 at the latest. The reports have been published on the ENSREG website. (1)

Greenpeace criticised the Stress Tests because there had been no assessment of off-site emergency plans and there was no in depth analysis of the vulnerability to terrorist attack. Individual reports show that Fukushima has unearthed a large swathe of important safety concerns that need to be addressed, but National Regulators have hijacked the process by declaring that everything is fine as soon as the draft reports where published, whereas in fact a peer review process is still being undertaken. (2)

Jan Haverkamp, nuclear policy expert at Greenpeace, says the Stress Tests exposed some "black holes" in the emergency responses that need to be addressed. There was a huge variation in the reports produced by different countries, and the level of communication with citizens. France carried out tests on 76 nuclear installations and each report had around 400 pages. These reports undoubtedly uncovered issues that need to be addressed. Even before the final reports were complete, the regulator – the ASN - held meetings with local stakeholders. The final reports came up with a very large list of changes that need to be implemented whatever the outcome of the stress tests. ASN said they would tell the operator of nuclear installations to implement safety measures identified. ASN was also very clear when journalists asked what would happen if the required changes were too expensive. ASN president Andre Lacoste replied simply: if they do not want to invest, they can always close the power station. (3)

There are a few very big shortcomings in the Stress Tests. On Security Issues an Ad Hoc Group on Nuclear Safety was set up by the European Council. This works in complete secrecy, because they are afraid that the information could give terrorists ideas. So far the group has given the impression that it is looking at theft of radioactive material such as uranium or plutonium. But they need to look at other issues such as terrorist attacks, cyber-attacks, sabotage, and acts of war.

Greenpeace has also suggested that a special group under the European Council should look at emergency responses. There is a strong non-official NGO coalition behind this idea, including Friends of the Earth. This black hole remaining even after the final report of stress tests in June 2012 will undermine the credibility of the stress tests as such. The June council meeting of energy ministers is expected to receive a report on the stress tests, but the full process might not be completed by then. The tests are expected to be followed up later this year by a Commission proposal, which could seek to reform EU nuclear safety legislation, and officials have been debating questions, such as whether regulatory authorities are sufficiently independent. (4)

In the UK the Office for Nuclear Regulation (ONR) has confirmed that it will publish a follow-up report of its Fukushima report in the autumn. This report will consider progress with nuclear safety post Fukushima and any further learning points that have arisen since the publication of its 2011 reports. It will also provide a review of progress with all the recommendations that were made in its interim and final review reports on the regulator, central government and the nuclear industry.

Greens/EFA co-chair Rebecca Harms says stress tests similar to those carried out in the EU are being used as a "seal of approval" to restart reactors in Japan, without them meeting proper safety requirements. Speaking at a press conference in the European parliament, Harms said that she had gone to Japan to examine the situation there, adding that "resistance in Japan to the re-commissioning of reactors is very strong. Over 70 per cent of Japanese citizens are opposed to a nuclear future," said the German MEP, before stressing that "problems and poor management of the [Fukushima] disaster have still not been eliminated". (5)

- (1) http://www.ensreg.eu/EU-Stress-Tests/Country-Specific-Reports See also New Scientist 9th Mar 2012 http://www.newscientist.com/article/dn21556-fukushimas-fate-inspires-nuclear-safety-rethink.html?DCMP=OTC-rss&nsref=online-news
- (2) Can Stress Tests be saved from Greenwash? Presentation by Jan Haverkamp, Brussels 17<sup>th</sup> January 2012
- (3) Euractiv 16<sup>th</sup> Feb 2012 http://www.euractiv.com/energy/greenpeace-wins-black-holes-eu-nuclear-stress-tests-interview-510885
- (4) Reuters 6th Mar 2012 http://www.reuters.com/article/2012/03/06/nuclear-stress-idUSL5E8E61ZE20120306
- (5) The Parliament 6th March 2012 http://www.theparliament.com/latest-news/article/newsarticle/eunuclear-stress-tests-used-to-rubber-stamp-japanese-power-stations/

## 8. 12 of 19 nuclear sites at risk of flooding

As many as 12 of Britain's 19 civil nuclear sites are at risk of flooding and coastal erosion because of climate change, according to an unpublished government analysis obtained by *The Guardian*. Nine of the sites according to the Department for Environment, Food and Rural Affairs (Defra) are vulnerable now, while others are in danger from rising sea levels and storms in the future.

Two of the sites for potential new reactors – Sizewell in Suffolk and Hartlepool in County Durham, where there are also operating reactors – are said to have a current high risk of flooding. Closed and running reactors at Dungeness, Kent, are also classed as currently at high risk. Another of the sites at risk is Hinkley Point in Somerset, where the first of the new nuclear stations is planned and where there are reactors in operation and being decommissioned. According to Defra, Hinkley Point already has a low risk of flooding, but by the 2080s will face a high risk of both flooding and erosion. (1)

(1) Guardian 7th March 2012 http://www.guardian.co.uk/environment/2012/mar/07/uk-nuclear-risk-flooding?newsfeed=true Map of nuclear sites: Guardian 7th March 2012 http://www.guardian.co.uk/environment/graphic/2012/mar/07/uk-nuclear-sites-flooding-map DEFRA Analysis available here: Rob Edwards 7th March 2012 http://www.robedwards.com/2012/03/most-nuclear-sites-at-risk-of-flooding-and-coastal-erosion-says-government-study.html

## 9. Emergency Planning Review

There is still no sign of the Nuclear Emergency Planning Liaison Group's (NEPLG's) finalised review of UK emergency planning arrangements which was expected at the beginning of this year, but has yet to be published. As part of its review of the Fukushima incident the Office of Nuclear Regulation's Weightman review made a considerable number of recommendations on nuclear emergency planning. As a result the UK Government agreed to conduct a review of emergency planning arrangements, led by the (NEPLG). (1)

A presentation on nuclear emergency planning issues by the Nuclear Free Local Authorities in February identified the following issues as of concern:

- The size of the detailed emergency planning zone (DEPZ) around nuclear power plants.
- Flooding concerns following publication of the DEFRA report.
- Concerns over the transportation of nuclear materials.
- Continued worries over a malicious nuclear terrorist incident.
- The problems of developing live emergency planning exercises to test the issues around a prolonged and extensive nuclear incident.
- Consideration of medium / long-term recovery issues after a nuclear incident.

The size of detailed emergency planning zones was discussed in detail at the recent Sizewell Site Stakeholder Group (SSG) when it was agreed to press for consideration being given to extending the emergency planning zone to 20 kms from its current 2.4 kms.

- (1) See NuClear News No.37 February 2012 http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo37.pdf
- (2) See NuClear News No.38 March 2012 http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo38.pdf

## 10. French Court of Auditors finds that nuclear power is expensive

The French Court of Auditors has found that nuclear power costs more than what electricity consumers in the country are charged. The 446-page report, which is only available in French and does not have an executive summary, was designed mainly to answer the question of whether "all costs are taken into account" in the pricing of nuclear power in France. The answer is no.

The study found that the cost of constructing a nuclear plant has risen from 1.07 million euros (adjusted for inflation as of 2010) per megawatt in 1978 to 1.37 million euros per megawatt in 2002. The most recent estimate for the second EPR plant currently under construction in Flamanville is 3.7 million euros per megawatt.

The European Wind Energy Association estimates that nuclear will cost 102 euros per megawatt-hour by 2020, whereas onshore wind will be around 58 euros, and offshore wind 75 euros.

IB Times 26<sup>th</sup> Mar 2012

http://www.ibtimes.co.uk/articles/20120326/nuclear-power-too-expensive-french-court-finds.htm

#### 11. Radwaste Consultation Closes

As we go to press the latest Parish or Town Council to vote against Cumbrian Local Authorities taking further steps towards "geological disposal" was Maryport Town Council. (1) In Allerdale 20 Councils out of 60 have voted against and only two in favour. In Copeland five out of 28 have voted against with only Millom voting in favour so far.

A public consultation into whether West Cumbria should take part in the search for a site for a nuclear waste dump for the UK's higher activity radioactive waste – or deep geological disposal facility – ended on 23<sup>rd</sup> March. More than 750 written responses were received. A further three thousand were gathered by a telephone opinion poll. County councillor Tim Knowles who chairs the group looking into the plans today said he was disappointed more people hadn't responded. (2)

In its submission the Nuclear Free Local Authorities (NFLA) said the safety case for the repository had not been made. It highlighted the number of outstanding issues that are still to be looked at before we could even begin to produce a decent safety case. The Nuclear Decommissioning Authority

(NDA) has listed 900 outstanding issues that need to be investigated, including the possibility that gases containing radioactive elements could force their way to the surface. (3) Thus it is impossible to demonstrate with any scientific credibility that the resultant radiation dose to people from a nuclear waste repository would be at an acceptably low level into the far distant future.

The NFLA said the voluntarist approach appeared to be overriding the idea of finding the safest possible method to manage these dangerous wastes. There should be a national debate about what constitutes suitable geology and how to find it before Cumbrian authorities proceed to the next stage. (4) NFLA also called on the Partnership to stop claiming that 70% of the waste destined for the repository is already stored at Sellafield. This is misleading. With no life extension and no new reactor programme we could avoid creating around half of the waste currently planned to go into the repository.

Geologist, Professor David Smythe, says national and international guidance on how best to select potential sites for deep geological nuclear waste disposal is being ignored. Among the desirable criteria cited the same themes emerge; geological simplicity and slow, predictable groundwater flow, because the final and most important barrier to escaping radioactivity is always the natural geology. Defra has misled the public in implying that 'voluntarism' abroad has taken precedence over geological search criteria, whereas in all other countries the geological search came first. (5)

Local campaigner, Jean McSorley, highlights the fact that the consultation is effectively about two linked nuclear projects, the surface facilities and the Geological Disposal Facility (GDF). The surface facilities for the GDF could involve not only a spent fuel 'encapsulation' (packaging) plant, as discussed in the consultation, but also a massive central store for thousands of tonnes of spent fuel from new reactors. This latter issue is not discussed in the consultation. By itself an encapsulation plant for spent fuel would add significant environmental risks to what would be a massive nuclear waste disposal project. A spent fuel store would further increase the risks.

- (1) A map of councils that have voted against is available here: http://mrwsold.org.uk/blog/ Parishes in Allerdale Map here: http://www.calc.org.uk/search/allerdale\_parishes.asp
- (2) ITV Border 23<sup>rd</sup> March 2012 http://www.itv.com/news/border/2012-03-23/nuclear-storage-consultation-finishes/
- (3) BBC 23<sup>rd</sup> March 2012 http://www.bbc.co.uk/news/science-environment-17476465
- (4) NFLA Radioactive Waste Policy Briefing No.33 http://www.nuclearpolicy.info/docs/radwaste/NFLA\_RWB\_32\_West\_Cumbria\_MRWS\_consultation.p
- (5) Response to the West Cumbria MRWS Consultation: Why a deep nuclear waste repository should not be sited in Cumbria. Prof David Smythe, March 2012 http://www.davidsmythe.org/nuclear/Smythe%20consultation%20response%20march%202012.pdf

#### 12. Nuclear Security Summit Fails

Representatives from 53 nations met in Seoul at the end of March for the second Nuclear Security Summit to discuss the progress made in countering the dirty bomb threat and "lock down" vulnerable nuclear materials. According to the International Atomic Energy Agency there are roughly 200 incidents reported to it every year with a small percentage involving bomb-grade uranium. (1)

The uncontroversial goal - set at the first Nuclear Security Summit two years ago—of securing and reducing radioactive materials that could be used in a dirty bomb has turned out to be difficult to do. Discussions have got bogged down because of concerns about national sovereignty, competing corporate interests, trade priorities and differing perceptions about the threat of nuclear terrorism. Negotiations have become just as complicated as those over the global financial crisis and climate change.

The U.S., for instance, was pushing for countries to pledge to give up the use of highly enriched uranium in civilian settings, such as for medical isotopes in fighting cancer or nuclear power research, by 2015. Instead, a draft of the summit communiqué indicated the participating countries would simply commit to reducing the use of HEU, a material that can also provide the fuel for atomic weapons, without a specific deadline or amount. (2)

Estimates suggest as much as 1,600 tons of weapons-grade highly enriched uranium (HEU) and 500 tons of plutonium exist in the world, sometimes stored under questionable security in former Soviet states and elsewhere. Obama said in a speech at the Summit that "just the smallest amount of plutonium – about the size of an apple – could kill hundreds of thousands and spark a global crisis." There are millions of other radioactive sources at nuclear power plants, research facilities and hospitals, which store isotopes used in treating cancer. Security experts say these could be used by terrorists to spread contamination through a "dirty bomb". Only about 55 pounds of HEU or 17.6 pounds of plutonium would be required to build a working nuclear bomb. Even less material would be needed for a "dirty bomb", a combination of conventional explosives and radioactive substances that would release far less radiation but pack a high terror punch. The International Atomic Energy Agency has confirmed 20 cases of theft or loss of HEU or plutonium in the past two decades and hundreds more cases of other nuclear material going missing. (3)

Deputy Prime Minister, Nick Clegg says materials to make a dirty bomb are now so readily available that no police force can hope to contain such a threat. And while such an atrocity was unthinkable just a generation ago, no country can now afford to ignore the potential risk. Al-Qaeda is actively thought to be trying to secure nuclear material and recruit rogue scientists to build a radioactive "dirty" bomb. (4)

The Summit communiqué described nuclear terrorism as one of the most challenging threats to international security. But the responsibility to maintain security over nuclear materials lies firmly with states rather than international bodies. And any effort to try to establish or impose common international standards inevitably raises concerns in some quarters that the world's major powers are seeking to intrude into the nuclear affairs of other countries. That's why this communiqué reaffirms that measures to strengthen nuclear security will not hamper the rights of states to develop nuclear energy for peaceful purposes, and only urges states to minimise the use of highly enriched uranium. (5)

All the summit was able to do was urge states to take measures to secure these materials and work towards ratifying international conventions on nuclear security. Not a good outcome given plans for the global expansion of the industry.

- (1) Trust 21st Mar 2012 http://www.trust.org/alertnet/news/iaea-says-nuclear-security-improving-more-to-be-done
- (2) Wall Street Journal 26<sup>th</sup> March 2012 http://online.wsj.com/article/SB10001424052702303816504577305471158594842.html?mod=googlen ews wsj
- (3) Telegraph 26<sup>th</sup> Mar 2012 http://www.telegraph.co.uk/news/worldnews/asia/southkorea/9166697/South-Korea-nuclear-summit-factbox.html
- (4) Telegraph 7<sup>th</sup> Mar 2012 http://www.telegraph.co.uk/news/uknews/law-and-order/9126896/Stateless-terrorists-with-a-dirty-bomb-now-real-threat-for-UK-says-Clegg.html
- (5) BBC 27th Mar 2012 http://www.bbc.co.uk/news/world-asia-17520156

#### 13. Hinkley Point shows planning regime fails democracy test

Last year Greenpeace sought a judicial review of the Government's decision to designate eight sites for new nuclear power stations in the Nuclear National Policy Statement before learning the lessons from Fukushima. But its application was refused. In his ruling, Mr Justice Ouseley gave an important clarification as to the authority of the Infrastructure Planning Commission (IPC) and the Office for Nuclear Regulation (ONR) to consider evidence on site specific issues in their assessment of applications for planning permission or licensing of nuclear sites. In effect, Mr Justice Ouseley clarified that the Nuclear NPS does not provide the final word on site and project specific issues including (a) flood risks, (b) off-site electrical supplies, and (c) on-site emergency controls. For instance, the Nuclear NPS merely sets out that the eight sites have the *potential* to be protected from flooding, but it is for the IPC and the ONR to consider whether the proposal before them would provide adequate protection, with regard to the characteristics and challenges of the location in question.

It is clear therefore that the IPC, in its consideration of an application for planning permission, or the ONR, in its consideration of an application for a Nuclear Site License, must give proper consideration to a wide range of site and project specific matters, including flood risk, off-site electricity supplies, on-site emergency controls and off-site communications.

Despite the judicial review decision the IPC appears to be planning to concentrate on more local and fairly parochial issues at the Hinkley Point Inquiry. Anti-nuclear groups are insisting that emergency planning, flooding, health and safety, waste management and discharges are all considered over the six months. (1)

Andrew Phillipson – the lead examiner — made it perfectly clear that all of the real issues of concern such as nuclear safety, waste storage, flooding, transport of nuclear materials weren't going to be dealt with at the inquiry. After the representative from South West Against Nuclear tried to argue several times that such issues are planning matters he eventually turned the representative's microphone off and refused to let her speak again, despite the fact that she was raising issues that she'd been legally briefed to raise. (2)

The IPC also rejected an application by local councils for more time to properly represent their constituents and understand the application and its impacts. Sir Andrew recommended that the local authorities should produce "thinner documents and break it down into smaller chunks" - extraordinary advice given they are having to read and respond to a 30,000 page application from EDF.

Theo Simon, one of the recent Hinkley Occupiers says "When Cameron did his good-news-for-growth photo-op with Sarkozy he announced, with all the vote-rigging confidence of a third world dictator, that "Hinkley C will be built" ... what is happening at Hinkley is a test-bed for the whole "fast-track" planning regime and what it could mean for projects in other parts of Britain – road-builds, runways or any other project favoured by a government that justifies new-nuclear by its commitment to reducing carbon emissions". (3) On the evidence so far the new planning regime has clearly failed any kind of democratic test.

- (1) Audio Transcript of preliminary hearing available here: http://infrastructure.independent.gov.uk/projects/south-west/hinkley-point-c-new-nuclear-power-station/?ipcsection=folder
- (2) http://southwestagainstnuclear.wordpress.com/2012/03/24/national-planning-dictatorship/ Stop Hinkley 22<sup>nd</sup> Mar 2012 http://www.stophinkley.org/PressReleases/pr120322.pdf
- (3) http://theosimon.wordpress.com/2012/04/01/whos-doing-wrong-at-hinkley-theo-debates-george/

## 14. UK opposes 2030 Renewable Targets

According to the Guardian the UK Government wants to scrap Europe-wide targets stipulating that a proportion of each member state's energy must come from renewable sources. The UK wants target scrapped when its current phase – requiring member states to generate 20% of energy from renewables – runs out in 2020. A UK submission to the European Commission says "The UK envisages multiple low-carbon technologies: renewables, nuclear and carbon capture and storage, all competing freely against each other in the years to come ... For this reason, we cannot support a 2030 renewables target." (1)

Removing the targets could spell disaster in particular for new forms of renewables such as wave and tidal power, which are tipped as areas in which the UK could lead the world. Claude Turmes, the Green MEP who was the European parliament draftsman for the original renewable energy directive, warned that the UK government's stance would imperil efforts to tackle climate change. He said:

"Low carbon targets are a Trojan horse, pushed by the nuclear industry and its proxies, to give a boost to ailing nuclear power. Nuclear is already more expensive than a number of renewable energy sources and by 2020 will be more expensive than offshore wind power, for which there is a huge potential in the UK."

Energy and Climate Change Secretary, Ed Davey, has hit back at the article, lambasting it as "misleading" and "wholly wrong". But what he seemed to be most angry about was the original headline which said that the UK wanted to re-brand nuclear as renewable energy. *The Guardian* has now amended that headline. Davey seemed to confirm, however, the main point of the article - that the UK is arguing for a technology neutral low carbon target for 2030.

Davey said: "The UK is one of a number of countries who believe any new targets should be technology neutral, leaving Member States free to determine the most cost effective energy mix to get the best deal for consumers." (2)

Greenpeace said "Including carbon capture and storage and nuclear power in the target would enable the big six energy companies to retain their current stranglehold on our power sector, building whatever kind of power generation most suits their business models. It will lock in public subsidies to nuclear generation and make us more dependent on expensive imported gas."

A spokesman for the wind energy industry association RenewableUK was relaxed over nuclear competition when contacted by *Nuclear Energy Insider*, but he focussed on the 2020 target. "The government has set a very clear set of targets for us to meet in terms of what's outlined in the renewable energy roadmap which DECC released last summer. That's saying we want 13 GW of onshore wind by 2020 and 18 GW of offshore wind by 2020. So we've got this target of 31 GW. We're only at about 6.5 GW at the moment so we're looking at a five-fold increase in the amount of installed capacity by 2020, which is a big target for us. That's the target that's been set by the government and we think we can reach it as long as the current levels of financial support are maintained for the industry. So there's a clear direction there." (3)

- (1) Guardian 11<sup>th</sup> March 2012 http://www.guardian.co.uk/environment/2012/mar/11/uk-renewable-energy-target-nuclear-power
- (2) Solar Power Portal 19<sup>th</sup> March 2012 http://www.solarpowerportal.co.uk/news/davey\_hits\_back\_at\_misleading\_article\_which\_claims\_nucle ar\_will\_be\_2356/?utm\_source=Feeds&utm\_campaign=News+Feed&utm\_medium=rss
- (3) Nuclear Energy Insider 14<sup>th</sup> March 2012 http://tinyurl.com/clfewko