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1. Radioactive Waste Dump Search Could Hit the Buffers

The final report of the West Cumbria Managing Radioactive Waste Safely Partnership was published on 16th August. (1) The three local councils which have expressed an interest in finding a site for a nuclear dump will meet separately on 11th October to debate whether to take the process any further. On September 6 and September 7 2012, public meetings were held in Cockermouth and Calder Bridge with presentations given by Professor Stuart Haszeldine of Edinburgh University, Prof David Smythe, emeritus of Glasgow University and Prof Andy Blowers, formerly of CoRWM, who explained, amongst other things how more than enough information already exists to make a decision to exclude possible sites in Allerdale and Copeland. (2) The pro-dumping local MP Jamie Reed has expressed his concern about widespread rumours that the cabinet of Cumbria County Council is going to vote against proceeding with geological investigations - dealing a vicious blow, he says, to Britain's plans for new nuclear reactors. (3)

The Report

The Partnership's final report is a hefty 270-page plus document which neither proposes a recommendation for councils to follow, nor suggests an intended site. That was never its brief. Instead it has overseen the complex evidence-gathering process which has now been handed over to decision-makers at Cumbria County Council, Allerdale and Copeland. Between now and October, staff at these authorities and elected-representatives will be pouring over every single line with highlighter pens to inform their decision on 11th October. (4)

In the simplest terms, the issue facing councillors on October 11 is this: Does west Cumbria want to put out its thumb now and embark on a journey – the final destination of which is 17 years away at least and would see a fully operational underground nuclear waste bunker being built in an as yet unidentified part of west Cumbria around 2040? How the vote goes remains to be seen. But many county and district councillors also have seats in the parishes – that means local residents to answer to. Many local parish councils have already taken preliminary votes on this issue – the overwhelming

majority against it being built on their patch. (5) How much real influence these initial grassroots expressions will carry in the conclusive vote in October remains to be seen, but is likely to lead to some explosive future parish council meetings.

If the Councils do decide to participate further in this process then desk-based studies (Stage 4) and site investigations (Stage 5) would precede possible construction and operation of a facility (Stage 6). A right of withdrawal exists up until the end of Stage 5.

Highlights of the report:

Inventory – The Community Siting Partnership (CSP) is advised to enter into negotiations with the Government to develop a mutually acceptable process for how the inventory would be changed - including a possible community veto on changes.

Geology – The report says it is inherently uncertain whether a suitable site can be found. There is a fundamental difference of view within the Partnership about whether further geological work should be done before or after a decision to participate.

Safety – There remain some concerns about the lack of progress made by the NDA on its R&D programme and the lack of clarity over the timescales for completing individual research topics. A CSP should be funded to commission independent reviews of any work conducted by the NDA including safety-related work, potentially via setting up a panel of independent experts.

Impacts – The Partnership recommends a co-ordinated strategy and action plan to support those aspects of Cumbria's economic activity which may be adversely affected (tourism, land-based and food and drink sectors) if the search for a site goes ahead.

Community Benefits Package – The extent of any community benefits package if the search goes ahead is unknown except that they would be beyond those that derive from the construction and operation of the facility. A set of Community Benefits Principles has been agreed with the Government. The Partnership recommends that a decision to accept a Geological Disposal Facility should only be made if the community is convinced that the Government, and future governments, will honour commitments.

Host Communities and Voluntarism – in view of the large number of Parish Councils which have expressed opposition to going ahead with the search for a site, sections 13.11 to 13.14 are interesting. If one of the local authorities were to decide in principle that a potential host community's view about participation in the siting process automatically prevailed, then it would be vulnerable to legal challenge. On the other hand the Stage 4 process would be unlikely to secure community confidence and trust unless voluntarism is at the forefront of thinking and the views of potential host communities are seen to carry very significant weight.

Commitment to make key parts of the process legally binding - including the right of withdrawal. The former Minister of Energy agreed this.

The area covered by the underground nuclear dump could be between the size of Workington up to almost the size of the City of York. (6) Its depth could be anywhere between the height of the Eiffel Tower to the height of Scafell Pike (3,000ft).

The Geology

At the two public meetings in September Prof Stuart Haszeldine compared the geology of the site chosen for nuclear waste disposal in Finland with Cumbria. The Finnish site is flat with uniform rock where the groundwater moves slowly. Sites in Cumbria would be next to mountains, where the

groundwater moves very fast, with very complex faulted rock. West Cumbria has very adverse geological conditions for hosting a Geological Disposal Facility (GDF). Examination of this evidence, and the potential to acquire new expensive and detailed evidence from west Cumbria will 1) end up in a rejection of the region as a siting location – just as this was rejected in 1997 after the evidence was examined: 2) waste money and time: 3) risk Councils being over-ruled by central government to enforce siting of a GDF, once any sort of detailed investigation has begun. Consequently Councils should withdraw at this stage, and a short list of scientifically plausible UK sites should enter into an MRWS process at multiple sites, so that a scientifically defensible, and publicly acceptable process can be established. (7)

The reasons why West Cumbria is unsuitable include: geological complexity (it's a subsided volcano with many extra faults); there is upward flow of groundwater past the waste, heading to the surface; and the water is chemically "oxidized" – which makes uranium soluble. Hot temperatures from spent fuel and high level waste will destabilise the minimal natural barriers. Radioactive gas can leak to the surface within 60 years, and the copper canisters to isolate radioactive iodine may corrode, and waste heat will crack the rocks and lift the land surface. Site selection has been based on politics, not on security of the public. A project the size of the channel tunnel in the rural Lake District means decades of construction workers; two pyramid-sized mounds of rubble on the surface for 150 years; a new surface "cooling facility" to chill extra hot waste for 150 years until it can go below ground. (8)

Dr Jeremy Dearlove has been advising the Partnership on geology and the submissions from Professors Haszeldine and Smythe. In his review of consultation submissions he concludes that:

*"There remain two potentially suitable rock volumes in West Cumbria for which insufficient data and no published authoritative reviews are currently available, that have the potential to be suitable GDF host rocks. **Neither of these two rock volumes should be regarded at this stage as particularly promising**, in terms of their potential to eventually be identified as suitable GDF host rock, but until available data have been reviewed by a suitably impartial authoritative body, they cannot be ruled out at this stage from the MRWS Partnership process."* (9) [Emphasis added]

The two rock volumes concerned are the Mercia Mudstone Group (MMG) of northern Allerdale and the Eskdale/Ennerdale granite in Copeland. David Smythe says he has demonstrated that both these rock groups are unsuitable, but his arguments have not been considered properly. (10) Smythe says the MMG rocks have a permeability which is far too high to be considered suitable, and that is before faulting is taken into consideration. (11) The Eskdale granite is unsuitable because of extreme topography; it is adjacent to Lake District Boundary Fault; there is oxidising groundwater; it is heavily faulted internally with a complex internal structure; there are possible 'hyperpermeable' fracture zones and it is a minor aquifer. The Ennerdale granite also has extreme topography, a complex internal structure and is a minor aquifer. (12)

Prof Blowers asked whether the Government's desire to legitimate new build meant that it is pressing for a GDF as soon as possible, and exerting undue pressure on West Cumbria? He talked about the Managing Radioactive Waste Safely process, and how it differs from the programme and aims agreed by CoRWM, ethics, benefits, resolving of disputed issues, and involvement of citizens and communities in decision making. (13)

The Decision

On October 11th just two of the local authorities need to give the go-ahead for desk-based studies to begin but one has to be the county council. (14) The decision will be taken, in public, by the two borough council Executives and the county council's Cabinet. Before that the full council of each authority will hold special meetings, again in public, to debate the issue and make any recommendations.

The answer must surely be no, said an editorial in the Carlisle News and Star. (15) Multi-billion pound plans for an underground nuclear waste dump in the west of the county must be turned down it said. Caution and scepticism are more than justified in this case. The majority of Cumbrian parish and town councils that would be affected have already said they are opposed to the scheme. The Government has promised “community benefits” for the area that agrees to the dump, but has never actually stated what those benefits would be. Why not? Does no one know how much it would all be worth for our economy or how it would be spent? Is it worth our councillors taking the gamble? Approving the project would be like playing the TV game Deal or No Deal – we don’t know how much is in the box, but hey, we’ll go for it anyway.

Chairman of the Cumbrian Association of Local Councils (CALC), Copeland Tory councillor Keith Hitchen, said it is vitally important this decision is not rushed and that the county and borough councils have fully satisfied themselves that the proposed MRWS programme has credible foundations. CALC believes there are serious gaps in the information available to the councils that must be addressed before any decision is taken. The majority of town and parish councils in West Cumbria are unconvinced about the current approach to the programme. The county and borough councils should not be taking this decision without an authoritative, independent appraisal of the area’s geology that spells out what the prospects really are of finding a suitable site. There is a possibility of time, effort and money being wasted in abortive research and site investigations. In addition CALC is concerned that the legal requirement to look at alternatives has not been met and there is no agreed approach to ensure the co-operation and participation of potential host communities in West Cumbria - an essential requirement in a voluntary programme. (16) •

In a letter to the Whitehaven News, Copeland Labour MP Janie Reed says judging by widespread rumours and direct conversations he has had, it now appears that the cabinet of Cumbria County Council is going to vote against proceeding with geological investigations. He says underground storage or disposal of radioactive wastes is the best way to deal with radioactive waste. He says the ‘acceptance’ package from Government would be the single largest investment of its type in the history of West Cumbria – representing billions of pounds of investment. Alongside this, a repository would have a hugely positive impact on the nuclear industry, making major new commercial projects much more likely. In addition, the construction of a repository would be one of the largest civil engineering projects anywhere in the world. Turning our backs – again – on the remedy to so many of the problems we face will mean at best decades of economic deterioration and at worst, set us on the path of terminal decline. Saying ‘no’ seals our fate: it shows government that the County Council isn’t a serious or credible partner, it deters investment and it weakens the one industry that gives us the chance to be globally significant and successful. Saying ‘yes’ gives us the chance to build the economy we need and that our children deserve: it would show that the County Council understands the issues facing West Cumbria our major industry and other businesses, it would inspire investor confidence and ensure that our best days are ahead of us. (17)

The Whitehaven News described Reed’s revelations as “a political bombshell”. Craig Dobson, Sellafield Workers Campaign secretary, said: “*We have consistently worked to help achieve a nuclear renaissance in West Cumbria and the country as a whole and we will continue to do this. A coherent, credible nuclear policy must have a final waste disposal policy. Any move to thwart, block or delay this will have a serious and negative effect upon the British nuclear industry and our hopes for the future ... it is absolutely essential that, on October 11, local government votes ‘yes’ to continue with the geological investigation process. The consequences of a ‘no’ vote would be disastrous.*” (18)

- Meanwhile, plans to build a nuclear waste dump on Romney Marsh in Kent have been rejected by councillors after a survey of residents found 63% were against it. Members of Shepway Council voted 21 to 13 against formally expressing interest in the government’s facility for the geological disposal of nuclear waste. (19)

- (1) Final report of the West Cumbria Managing Radioactive Waste Safely Partnership, WCMRWS 16th August 2012 http://www.westcumbriamrws.org.uk/documents/306-The_Partnership's_Final_Report_August_2012.pdf
Précis here: http://www.westcumbriamrws.org.uk/news_more.asp?news_id=47
- (2) University of Edinburgh, School of Geo Sciences, 7th September 2012
http://www.geos.ed.ac.uk/homes/rsh/Allerdale_and_Copeland.html
- (3) Whitehaven News 13th Sept 2012 <http://www.whitehavennews.co.uk/letters/you-say/why-n-waste-process-must-go-on-by-copeland-mp-jamie-reed-1.995137?referrerPath=home>
- (4) Nuclear Waste Disposal - the Partnership report condensed. Whitehaven News 24th Aug 2012
<http://www.whitehavennews.co.uk/news/nuclear-waste-disposal-the-definitive-report-condensed-1.988759?referrerPath=news/>
- (5) See maps of Parish Councils and how they voted here:
http://www.geos.ed.ac.uk/homes/rsh/MRWS_2012.html
- (6) Times and Star 24th August 2012 <http://www.timesandstar.co.uk/news/politics/nuclear-dump-could-be-as-big-as-workington-1.988739?referrerPath=news/politics> and page 31 of final report.
- (7) Prof Haszeldine's response to the Partnership's consultation, 22nd March 2012
http://www.geos.ed.ac.uk/homes/rsh/Haszeldine_Response_to_westCumbria_MRWS_Consultation.pdf
- (8) Presentation by Stuart Haszeldine, 6th & 7th Sept 2012
http://www.geos.ed.ac.uk/homes/rsh/Geological_disposal_of_radioactive_waste_Haszeldine_5Sept2010_SMALL.pdf
- (9) Dr Dearlove's review of consultation submissions on geology, 18th June 2012
http://www.westcumbriamrws.org.uk/documents/285-Review_of_Consultation_Submissions_on_Geology_by_FWS_Consultants_Ltd_18_June_2012.pdf
- (10) Radiation Free Lakeland 15th August 2012 <http://mariannewildart.wordpress.com/2012/08/15/a-geological-dump-in-cumbria-will-leak-radioactive-contamination-within-a-short-time/>
- (11) David Smythe's presentation on suitability of sites in Allerdale 6th & 7th September 2012
http://www.geos.ed.ac.uk/homes/rsh/Allerdale_Deep_Repository_Smythe_6sep12_V1.pdf
- (12) David Smythe's presentation on suitability of sites in Copeland 6th & 7th September 2012
http://www.geos.ed.ac.uk/homes/rsh/Copeland_Deep_repository_Smythe_7sep12_V1.pdf
- (13) Andy Blowers presentation 6th & 7th September 2012
http://www.geos.ed.ac.uk/homes/rsh/Time_to_decide_West_Cumbria_meetings_Blowers_6_7_Sept_2012.pptx.pdf See also Whitehaven News 13th Sept 2012 <http://www.whitehavennews.co.uk/news/but-it-s-one-of-worst-places-to-bury-it-says-professor-1.995035?referrerPath=news/1240087>
- (14) Whitehaven News 23rd august 2012 <http://www.whitehavennews.co.uk/news/date-set-for-councils-decision-on-n-waste-1.988379?referrerPath=news>
- (15) Carlisle News and Star 15th Sept 2012 http://www.newsandstar.co.uk/opinion/mark-green/we-have-to-say-no-to-nuclear-dump-1.995191?referrerPath=opinion/ross_brewster
- (16) Whitehaven News 30th August 2012 <http://www.whitehavennews.co.uk/news/caution-urged-ahead-of-n-waste-decision-1.990626?referrerPath=news>
- (17) Whitehaven News 13th September 2012 <http://www.whitehavennews.co.uk/letters/you-say/why-n-waste-process-must-go-on-by-copeland-mp-jamie-reed-1.995137?referrerPath=home>
- (18) Whitehaven News 13th September 2012 <http://www.whitehavennews.co.uk/news/mp-hits-out-as-nuclear-waste-plan-faces-no-vote-1.995151?referrerPath=news/>
- (19) BBC 20th Sept 2012 <http://www.bbc.co.uk/news/uk-england-kent-19656382>

2. Sellafield's Dangerous Balancing Act

The extent to which Sellafield is carrying out an expensive and dangerous balancing act in order to complete its reprocessing contracts is becoming clearer. Fifty-five year old tanks containing highly radioactive liquid waste are not now going to be replaced to save around £1.5bn, and the new evaporator originally intended to reduce the inventory of dangerous liquid as quickly as possible, will not be operational until 2016 having cost at least six times the original estimated cost. Yet reprocessing continues – not just of overseas spent fuel, which we may feel honour bound to reprocess, but mainly of AGR spent fuel. This seems to be mainly to free up space so that EDF Energy can extend the life of its ageing AGR reactors, and avoid the cost of new spent fuel storage facilities.

There remains only about 300 tonnes of overseas-derived Light Water Reactor spent fuel to reprocess. This means THORP has completed over 90% of its order book for overseas fuel reprocessing. There is about 150 tonnes of spent fuel from the UKAEA and around 2,067 tonnes of AGR spent fuel which the NDA considers itself to be contracted to reprocess. Then there is around 4,133 tonnes of AGR spent fuel which is contracted for reprocessing or storage. So when the NDA talks about the need to complete its reprocessing contracts, most of the spent fuel concerned is actually British AGR spent fuel.

If everything goes according to plan, the Thermal Oxide Reprocessing Plant (THORP) will close in 2018 having completed all overseas contracts, and reprocessed the AGR spent fuel it is contracted to reprocess. Sellafield's spent fuel ponds will have enough capacity to store the remaining AGR spent fuel, even if the lives of the 7 AGRs are extended by an average of 7 years; the ageing Highly Active Storage Tanks (HAST) will have sufficient capacity to store the liquid high level waste produced by reprocessing and a new evaporator – Evaporator D – will come on stream just in time to help mainly with post operational clean-up after both reprocessing plants have closed.

But how often have we known things at Sellafield to go according to plan? (1)

THORP was originally expected to complete its reprocessing contracts by 2010. The NDA expects to be able to store AGR spent fuel in the THORP pond until at least 2075 when it expects to be able to start emplacing it in a Deep Geological Disposal Facility (GDF). But the NDA may not have sufficient capacity to store all AGR arisings if it doesn't complete the reprocessing it is contracted to carry out. Although the NDA says it looked at the option of reprocessing less AGR spent fuel than it is contracted to reprocess, nowhere does it explain why it is so determined to reprocess more than 2,000 tonnes before THORP closes in 2018, beyond saying that if reprocessing stops too early it may have to build additional storage capacity and put in place additional arrangements to manage fuels more susceptible to corrosion during storage. (2) On the other hand the THORP pond will have enough capacity to store all the spent fuel coming from the AGR power stations if EDF Energy extends the AGR fleet by an average of seven years. It will even have sufficient capacity to interim store AGR spent fuel if EDF Energy were to further extend the life extensions of their fleet by a further few more years beyond seven years. (3) Every 1 year extension to all 7 AGRs adds around 180 tonnes of spent fuel to the inventory. So, in effect, the NDA is reprocessing AGR spent fuel in order to avoid either building extra spent fuel storage capacity or curtailing AGR life extensions.

Sellafield Ltd has been running a project over the past few years to determine whether additional HAST storage capacity is required to complete the reprocessing contracts. This has involved reviewing the capability of the existing fleet and its margins of safety to manage Highly Active Liquor. It concluded there are significant margins of safety and contingency with the current fleet of HASTs to complete the remaining reprocessing programmes. Sellafield Ltd's studies have concluded, therefore, that the replacement-HASTs are *not* required for reasons of safety as they provide no increased safety benefit for the duration of the reprocessing programmes.

The NDA says abandoning the project to build up to six highly active (liquid) storage tanks, or HASTs, at Sellafield will save around £1.5 billion. The new HASTs were meant to replace capacity from an aging 21-tank complex that started storing the site's liquid reprocessing wastes in 1955. In 2010, Sellafield Ltd. awarded a contract to design the replacement HAST facility to the Halef Partnership, which is made up of Amec, Areva and Balfour Beatty. The Halef Partnership was due to complete its design work for the replacement HAST project this summer before the project was to move into a four-year procurement, construction and commissioning phase. The Office for Nuclear Regulation (ONR) says early information and engagement with Sellafield Ltd and NDA suggests that the replacement HASTs project at Sellafield "*may no longer represent the 'as low as reasonably practicable' position with regard to hazard reduction activities on the site.*"

The replacement HASTs, previously expected to enter commissioning around 2016, were currently scheduled for delivery in 2019, according to ONR. Therefore, the replacement tanks would not provide any additional safety or environmental benefits over and above those of the existing fleet. (4)

The NDA says the current evaporators at Sellafield do not have the capability to support the post operational clean out of the facilities that have managed Highly Active Liquors over fifty years. The Evaporator D construction project is Britain's biggest single nuclear project. It was originally estimated to cost £90m and was due to be completed as early as 2010. Earlier this year, in February, the NDA said the cost had jumped to £400m, and would probably end up costing £100m more. (5) At that time it was scheduled for active commissioning in December 2015, but the NDA admitted that date was unlikely to be met. It is now targeted for delivery in February 2016, a little more than two years before THORP is due to close. (6) Both Sellafield Ltd and the NDA said in statements May that the cost of Evaporator D had risen to as much as £673 million.

Evaporator D is, therefore, now said to be primarily needed to support the clean-up and decommissioning of the Sellafield site. Without it the NDA would have to reserve capacity in existing evaporators for clean-up operations with no guarantee that these evaporators could complete this mission.

- (1) See Sellafield Reprocessing to end – but not for six years, NuClear News No.42, July 2012 <http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo42.pdf> and Sellafield Déja Vu, NuClear News No.41, June 2012 <http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo41.pdf>
- (2) Oxide Fuels: Credible Options, NDA November 2011 <http://www.nda.gov.uk/documents/upload/Oxide-Fuels-Credible-Options-November-2011.pdf>
- (3) Oxide Fuels: Preferred Option, NDA, June 2012 <https://www.nda.gov.uk/documents/upload/Oxide-Fuels-Preferred-Options-June-2012.pdf>
- (4) i-Nuclear 16th May 2012 <http://www.i-nuclear.com/2012/05/16/hast-tank-project-may-be-abandoned-as-sellafield-reviews-thorp-evap-d-future/>
- (5) i-Nuclear 7th February 2012 <http://www.i-nuclear.com/2012/02/07/sellafields-evaporator-d-to-come-inat-well-below-1-billion-following-2009-redesign/>
- (6) i-Nuclear 7th June 2012 <http://www.i-nuclear.com/2012/06/07/nda-confirms-closure-of-thorp-for-2018-abandonment-of-replacement-hasts/>

3. Emergency Planning

The Nuclear Free Local Authorities (NFLA) has published a detailed assessment of the key emergency planning issues that have come out of the Fukushima disaster and how these should be extrapolated for a UK context. It strongly advocates radical reform of the UK nuclear emergency planning regime, and particularly the Office for Nuclear Regulation's (ONR) Radiation Emergency Planning & Public Information (REPPIR) emergency planning guidelines (1).

The briefing focuses on the REPPIR Regulations 2001 and concludes there is a strong case for expanding detailed emergency planning zones around UK nuclear sites and for an extensive review of the ONR's REPPIR regulations. The NFLA believes Fukushima was a fundamental game-changer for nuclear emergency planning. (2)

The UK's 'REPPIR' nuclear emergency planning regulations require a thorough review. The size of detailed emergency planning zones around a nuclear site, the availability of a large pool of suitably trained emergency responders to a nuclear incident, the serious problems and difficulties in 'extending' an evacuated area, the lack of 'live' exercises considering prolonged nuclear incidents, the content of public information and the provision of potassium iodide tablets are all areas in need of reform. The Fukushima incident highlighted major complexities in the size of an evacuated area, and how to extend the area in the event of increased radiation contamination. The problem of dealing with self evacuation complicates the matter even further. The concept of 'confinement' needs to be

seriously reconsidered in the event of a prolonged nuclear incident like Fukushima. Large numbers of people were left indoors for as much as 10 days running out of food and fuel with only limited support from the emergency responding agencies. The radiation impacts and the effects on public health due to the failure of emergency preparedness and response in the Fukushima incident may lead to significant long-term problems for a large number of Japanese people. These need to be carefully considered by the public health agencies in the UK for parallel issues with the UK nuclear sector.

Meanwhile a long awaited public consultation over proposed changes to emergency plans to protect the community near Sizewell is to be delayed – on the orders of the UK nuclear safety watchdog. Suffolk anti-nuclear campaigners have been pressing for early changes to the Sizewell plan, partly to reflect the impact of the Fukushima disaster in Japan last year when many thousands of people were evacuated from a 20-kilometre radius. Among the demands is an increase in the radius of the Sizewell emergency zone, currently 2.4 kilometres and excluding almost all of the nearby town of Leiston. The Suffolk Resilience Forum, the organisation responsible for drawing up the Sizewell plan, has been working on a review for much of this year and was ready to start a public consultation later this month. However, the Office for Nuclear Regulation (ONR) has now directed that the start of the three-month long public consultation be delayed – pending a national report on nuclear emergency planning. (3) (4)

- (1) NFLA Press Release 14th September 2012
http://www.nuclearpolicy.info/docs/news/NFLA_PR_Nuclear_EP_Brfg.pdf
- (2) The Fukushima disaster and UK nuclear emergency planning – the need for a fundamental change?
NFLA Briefing 14th Sept 2012
http://www.nuclearpolicy.info/docs/briefings/NFLA_NB_100_Nuclear_emergency_planning.pdf
- (3) East Anglian Daily Times 7th Aug 2012
http://www.eadt.co.uk/news/sizewell_nuclear_watchdog_orders_delay_to_emergency_plan_1_1473321
- (4) ONR 7th August 2012 <http://news.hse.gov.uk/onr/2012/08/onr-letter-on-proposed-sizewell-emergency-plan-consultation/>

4. The Strike Price isn't Right

It could be good news for offshore wind if the agreed 'strike price' for Hinkley Point is higher' than £100 per MWh, says David Toke, senior energy policy lecturer at Birmingham University. As we reported last month the CEO of EDF has said that they would be asking for less than £140 per MWh for the power plant at Hinkley C. The reason that this is good news for offshore wind is that whatever the Government did decide to offer as a strike price for nuclear power plants would also have to be offered to offshore wind, if the policy was to stand up politically. The Government has set an aspiration of bringing offshore wind down to a cost of £100 per MWh, so if Hinkley C were to get the over £100 MWh that EDF wants, then offshore wind would have to get at least the same - and remember that EDF is likely to want a longer contract length than offshore wind developers are likely to get. So £100 per MWh for a 15 year contract for offshore wind is really worth a fair bit less than £100 per MWh for a nuclear contract of 25-30 years. (1)

A working group of Lords that was asked by the government to provide pre-legislative comments on the draft energy bill has published its verdict, declaring that it has "*serious doubts*" that the proposed reforms will deliver a competitive market for low carbon electricity. The short eight-page report echoes many of the concerns raised by the Energy and Climate Change Select Committee of MPs, criticising the government for continued uncertainties surrounding key elements of the bill and the decision to leave many important decisions to secondary legislation, "*not all aspects of which will be subject to parliamentary scrutiny*". (2)

Specifically, the report criticises the lack of information on how the proposed contract for difference (CfD) feed-in tariffs will work for low carbon generators and raises concern that the process for

awarding subsidies through the CfD mechanism will be largely at the discretion of ministers. The government would have to estimate reasonable prices ("Strike Prices") for electricity generated by each type of generation for the duration of the contract – presumably 15 to 25 years. The Lords can't see how the government can do this in any credible way. Echoing concerns raised by MPs, industry groups and green NGOs, the Lords report warns that the level of ministerial discretion granted to ministers would leave them "*exposed to intense lobbying by private interests*", vulnerable to judicial review and challenges from Brussels on state aid. The proposed scheme is extraordinarily complex and for that reason unattractive to investors.

The government has signalled that it would eventually like to see the strike price provided through CfDs determined by auctions. But experts have warned that such an approach would penalise less mature low carbon technologies that could deliver affordable energy in the long term, while leading to an unbalanced reliance on more established generation technologies. As a result the report recommends that support for less mature low carbon technologies, such as marine energy or carbon capture and storage plants should be delivered through an alternative mechanism.

Even EDF is reported to be unhappy with the proposed contract design. Ministers are scrambling to redraw the contract in time for EDF to invest, but have previously warned that the model the industry wants may constitute state aid under EU rules. Negotiating state aid clearance could also threaten the year-end timetable. Keith Parker, chief executive of the Nuclear Industry Association (NIA), says he is optimistic that things are falling into place and "all the indications are" that EDF will proceed. But for them to do so, that guaranteed electricity "strike price" – currently being negotiated with the Government – will need to be right. (3)

Many in the industry - including Sir Bernard Ingham, Secretary of Supporters of Nuclear Energy (SONE) believes the strike price must be significantly lower than £140/MWh. A study commissioned by the Government last year put the price range for new nuclear at up to £74/MWh. Sir Bernard still believes nuclear should be the "*lowest cost source of secure, low-carbon power*" but since the negotiations are being conducted in secret, there's no way yet of knowing "*whether the consumer is being ripped off*". He warns: "*It does not take a genius to realise the market potential here for a monopoly supplier of new nuclear power such as EDF/Centrica, since there is no other consortium in business with the early prospect of securing a reactor licensed for construction in the UK.*" The choice between overpaying or abandoning the best hope of new nuclear would not be a palatable one for the Government and, despite increasing calls to do so, ministers have so far refused to elaborate on "Plan B" if no nuclear is forthcoming.

SONE has now told the Chancellor that current pricing proposals would give nuclear power an unnecessary subsidy and provide EDF, the French state-controlled group, with a huge return on its £14bn investment in the first two plants. Sir William McAlpine, SONE chairman, has written to George Osborne urging him to block any price deal with companies building nuclear stations "*unless and until you are absolutely satisfied the nation is getting value for money.*" SONE feels the odds are being stacked against nuclear because it is being lumped together with wind power and other subsidised renewable energy sources in the price set-up to "*create a level playing field.*" SONE says if EDF gets a strike price of £130/MWh its operational income could be £163bn over a 50 year lifetime. Sir Williams says neither the consumer nor businesses "*should have to pay through the nose*" for a subsidy system "*which seems to have very little justification.*" (4)

Toke says SONE has effectively surrendered in their efforts to secure a new reactor programme. It seems SONE is advocating direct financing of nuclear power construction by Government. This is very, very, unlikely. Hence nuclear industry supporters are, in effect, running up the white flag. This looks like an attempt to organise a dignified withdrawal in the face of overwhelming odds. (5)

(1) David Toke's Blog 13th Aug 2012 http://realfeed-intariffs.blogspot.co.uk/2012_08_01_archive.html

- (2) Business Green 17th August 2012 <http://www.businessgreen.com/bg/news/2199352/lords-raise-serious-doubts-over-energy-bill>
- (3) Telegraph 21st August 2012 <http://www.telegraph.co.uk/finance/newsbysector/energy/9488677/Doubts-mount-over-UKs-nuclear-energy-future.html>
- (4) Telegraph 14th Sept 2012 <http://www.telegraph.co.uk/finance/newsbysector/energy/9543057/No-nuclear-power-at-any-price-says-lobby-group.html>
- (5) David Toke's Blog 17th Sept 2012 http://realfeed-intariffs.blogspot.co.uk/2012_09_01_archive.html

5. Rising costs send EDF cap-in-hand to China

EDF Energy is trying to link up with a Chinese company to build new nuclear reactors in the UK, amid growing concern about the rising cost. However, any deal to bring large-scale Chinese investment into UK infrastructure, particularly the politically sensitive nuclear industry, could prove controversial. Insiders said EDF had been speaking to state-controlled Chinese companies about sharing the financial burden of its project to build up to four reactors. EDF said in July it was looking to cut its 80 per cent stake in the consortium building Hinkley Point and attract new partners. Centrica, owner of British Gas, has the remaining 20 per cent. EDF said the Hinkley Point project was advancing well, and had “*achieved a level of maturity to make it attractive to potential new investors*”. It went on to say that it was “*too early to say anything about the outcome*” of talks. One state-owned Chinese entity, China Guangdong Nuclear Power Corp, already has strong links with the French nuclear industry. It is in a consortium with Areva, the French state-controlled reactor manufacturer that is bidding for Horizon. CGNPC and Areva are also building reactors together in China. (1)

The Guardian said the move underlines growing pressure on the French company's internal finances and has reignited a fractious debate about Communist state-run businesses playing a critical role in sensitive western energy infrastructure. The overtures to Beijing's state corporations – as well as approaches to Middle Eastern sovereign wealth funds – come as EDF faces growing investment demands in France and the UK that have sent debt levels rocketing to €39.7bn (£30bn). Mark Pritchard, a Conservative MP and member of the parliamentary joint national security committee, said any Chinese involvement in EDF's new nuclear plans would raise concerns on a number of fronts and could even require a direct UK government involvement through some kind of golden share. (2)

- (1) FT 3rd September 2012 <http://www.ft.com/cms/s/0/2a1207ee-f54a-11e1-b120-00144feabdc0.html>
- (2) Guardian 2nd September 2012 <http://www.guardian.co.uk/environment/2012/sep/02/edf-china-nuclear-reactor?newsfeed=true>

6. Horizon talks continue

Talks have continued between various Western and Chinese nuclear companies about the possibility of buying Horizon nuclear. The Lancashire Evening Post reports that Westinghouse has joined forces with State Nuclear Power Technology China (SNPTC) to bid for Horizon Nuclear Power, which owns land at Wylfa in Anglesey, North Wales and Oldbury, Gloucestershire, where Westinghouse wants to build its AP1000 reactor. It is up against French reactor builder Areva, which has teamed up with China Guangdong Nuclear Power Corporation (CGNPC) to back its bid. (1) Ministers say they are very confident that a company will be found to buy Horizon.

The *Financial Times* reported that Chinese companies could not have more than a 50 per cent stake in Horizon, for reasons of public acceptance and political acceptance. (2) It editorial said “*The government should not be beguiled by its nuclear hopes into ignoring strategic concerns, such as whether it is wise to give Beijing access to UK atomic technology and to the architecture of the country's power grid. Such worries cannot be fixed with a few regulatory tweaks*”. (3) But Ministers denied they will limit the size of any Chinese stake. (4)

Professor Nick Pidgeon of Cardiff University told the Energy and Climate Change Select Committee that ownership was a material concern for the public – but not just for nuclear. Research into public attitudes revealed that concerns about Russian or Chinese influence in the nuclear sector reflected similar concerns around Russian gas – for example, news stories about Russian threats to withhold gas supplies from Europe during recent winters. However, the select committee, which conducts its own inquiries into activities around the energy and climate change brief, also took evidence from representatives of engineering institutions that suggested intense local involvement could counterbalance the fears over foreign ownership. The fact that EDF is a French company, had not had a material effect on acceptance there, witnesses said. The reason appeared to be that continuing and deep local involvement.

- (1) Lancashire Evening Post 8th August 2012 <http://www.lep.co.uk/news/business/china-talks-over-nuclear-future-1-4813734>
- (2) FT 19th August 2012 <http://www.ft.com/cms/s/0/1d0e0c70-e7b0-11e1-95e1-00144feab49a.html>
- (3) FT 20th August 2012 <http://www.ft.com/cms/s/0/913f7adc-eacd-11e1-984b-00144feab49a.html>
- (4) Western Daily Press 22nd August 2012 <http://www.thisissomerset.co.uk/8216-limit-Chinese-stake-reactor-8217/story-16746278-detail/story.html>
- (5) i-Nuclear 11th September 2012 <http://www.i-nuclear.com/2012/09/11/will-brits-accept-a-chinese-or-russian-backed-plant-few-clues-from-edf-experience/>

7. Generic Design Assessment (GDA) Update

EDF and Areva have undertaken a major overhaul of their work on the UK EPR design in an effort to recapture lost time and still obtain UK Office for Nuclear Regulation (ONR) approval for the design by the end of the year. Earlier this year, however, EDF and Areva submitted revised resolution plans to try to make up that lost time and still resolve all 31 of the original unresolved design safety issues by the end of the year. However, even against the new revised plans, the GDA co-applicants are already falling short, according to an ONR quarterly progress report for the period ending June 30 and published August 14. An ONR spokeswoman said September 3 the shortfall in June against the revised resolution plans “*is small and EDF and Areva are working to recover this.*” (1)

A further two GDA issues had been closed when the nuclear regulators published their progress report on 14th August. (2) The issues included concerns about monitoring of irradiation damage to material and evidence that concrete used at the reactor provided adequate shielding to ensure that workers and the public would be protected from radiation. (3) Since then another GDA issue related to seismic analysis methodology has been closed out bringing the total out of 31 to 4. (4)

But in the second of three reports commissioned by Wilkinson Environmental Consulting Ltd from the independent nuclear consulting engineers Large & Associates, the 'Generic Design Assessment' (GDA) process presently underway by the Office on Nuclear Regulation (ONR) comes in for sharp criticism. ONR admits that meeting the revised resolution timetable will be ‘*challenging*’, whereas Large & Associates conclude that “*the whole GDA process is so hopelessly behind that these time slippages will never be made up*” (5)

The controversial control and instrumentation (C&I) system for the EPR remains among the 27 outstanding GDA issues. In ONR’s latest quarterly report, C&I remains the only topical area of the design that remains almost entirely in the “red” area signifying that closure of the GDA Issue “*is in serious doubt with major risks apparent*”. In 2009, UK regulators joined with their French and Finnish counterparts in issuing a joint regulatory letter of concern about the digital C&I on the EPR. Although French nuclear regulator Autorité de Sûreté Nucléaire (ASN) has lifted its reservations on the digital C&I for the EPR under construction at Flamanville, there are real differences between the French, Finnish and UK designs which mean that not all regulatory authorities have the same set of issues. ONR is continuing contact with its fellow regulators in France and Finland. (6)

Large & Associates identify further but yet to be fully addressed, crucial nuclear safety issues in the area of instrumentation and control (I&C), concluding *that*:

“Set against the international difficulties in settling these same I&C issues, it follows that the expectation that the same EPR UK I&C outstanding GDA Issues will be completely closed-out in time to the ONR’s F-DAC target date of the close of 2012, would seem to be an unobtainable objective, a situation that the ONR has a duty to publicly acknowledge”. (7)

Large also complains about lack of transparency. One of the issues recently closed out (GI-UKEPR-SI-02) was about the surveillance of the material properties of the reactor pressure vessel as it is subjected to through-life irradiation. But none of the source reference documents relied upon by the ONR to identify this particular topic as a GDA Issue are publicly available. None of the documents submitted by AREVA-EdF to resolve the issue are available. The *revised* Resolution Plans are not fully available; and the ONR’s report explaining the reasoning underpinning its decision to close-out this particular GDA Issue is also not publicly available.

- (1) i-Nuclear 4th September 2012 <http://www.i-nuclear.com/2012/09/04/edf-areva-overhaul-uk-epr-design-review-efforts-to-meet-end-year-deadline/>
- (2) GDA Progress Report to 30th June 2012 <http://www.hse.gov.uk/newreactors/reports/gda-q2-12.pdf?ebul=gd-newreactor&cr=01/aug12>
- (3) Reuters 14th August 2012 <http://www.reuters.com/article/2012/08/14/energy-britain-nuclear-idUSL6E8JE9S120120814>
- (4) i-Nuclear 4th September 2012 <http://www.i-nuclear.com/2012/09/04/edf-areva-overhaul-uk-epr-design-review-efforts-to-meet-end-year-deadline/>
- (5) Wilkinson Environmental Consulting 5th Sept 2012 <http://www.largeassociates.com/cz3206/3206%20GDA%20Review/2ndReviewPress%20Release%20030812.pdf>
- (6) i-Nuclear 4th September 2012 <http://www.i-nuclear.com/2012/09/04/edf-areva-overhaul-uk-epr-design-review-efforts-to-meet-end-year-deadline/>
- (7) Wilkinson Environmental Consulting 5th Sept 2012 <http://www.largeassociates.com/cz3206/3206%20GDA%20Review/2ndReviewPress%20Release%20030812.pdf>
- (8) 2nd Interim Review of The ONR GDA Outstanding Issues, Large Associates, 3rd September 2012 <http://www.largeassociates.com/cz3206/3206%20GDA%20Review/R3206-I2.pdf>

8. Scotland’s Energy Plans found wanting

The Nuclear Free Local Authorities (NFLA) Scotland Forum has published an important and highly detailed report assessing how the Scottish Government’s move towards developing renewable energy and other positive energy policies is shaping up and offers a whole raft of examples where dramatic improvements could be made. (1)

“Following the German example? An NFLA assessment on whether the Scottish ‘renewable revolution’ in energy policy is being realised” (2) expresses disappointment with the Scottish Government’s decision to support ‘life extensions’ to Scotland’s existing nuclear reactors, which may allow some of them to continue operating until 2033. The briefing also compares Scotland’s energy policy to that of Europe’s economic powerhouse Germany. It makes a series of recommendations that could move Scotland on from the gradual increases in renewable energy production it currently plans to more dramatic, swift improvements that would allow for the closure of Scotland’s nuclear power stations much earlier. The report says there is no need for the Scottish Government to support risky life extensions. It concludes that improved energy efficiency, combined heat and power schemes and renewables could ensure that Scotland met its energy needs.

Report author Pete Roche, a policy adviser to Scotland’s nuclear-free local authorities, added:

"Milking Scottish reactors dry is another way of maximising the chances of an accident as these reactors get older and more decrepit. Clearly SNP activists who have been promoting a nuclear phase-out are not going to be happy about the possibility of Scotland remaining nuclear until 2033 and beyond."

Scottish ministers have repeatedly said they will not oppose plans by French nuclear company EDF to apply to UK regulators to keep Hunterston going until 2021. EDF is also likely to try and postpone the closure of Torness from 2023 to 2033. (3)

According to the Largs and Millport Gazette, the paper local to Hunterston, while it hasn't been officially announced Hunterston will probably be alive and kicking for another decade, at least. (4)

Hunterston B and Hinkley Point B are both due to close in 2016, but EDF Energy is considering keeping them open for another decade, according to The Telegraph. EDF must tell the Nuclear Decommissioning Authority by 2013 if it wishes to close them. (5)

The two AGRs are both due to undergo a periodic safety review (PSR) in 2015 according to ONR. But ONR doesn't expect to make a decision on whether to grant EDF Energy a renewed license until 2016. A PSR is carried out for each operating nuclear power station in the UK every ten years. The review requires an operator to prove that its nuclear power plant is safe and complies with site license conditions. EDF Energy has previously said it expects to achieve life extensions of an average of seven years for each reactor across its AGR fleet. (6)

The SNP's enthusiasm for a life extension for Hunterston prompted Labour's shadow Energy Minister MP, Tom Greatrex, to accuse them of preparing to perform a U-turn on nuclear power, but the Scottish Government insists it remains opposed to a new generation of nuclear power stations and that it "*will not happen in Scotland*". (7) Ayrshire Labour Councillor Alex Gallagher said by giving in to the inevitable and agreeing to extend the active life of Hunterston B, the Nationalists have shown they have no principled opposition to nuclear power. (8) SNP Westminster Energy spokesperson Mike Weir MP dismissed Mr Greatrex's claims and challenged Scottish Labour leader Johann Lamont to clarify her party's position on new nuclear. (9)

Meanwhile the Scottish Government was attacked for its "*feeble, inadequate and namby-pamby*" approach to tackling fuel poverty by the leading expert who first coined the phrase. Dr Brenda Boardman criticised the Government for failing to back up its "weasel words" with actions as it emerged 800,000 Scots families are now in fuel poverty. Over the next few years tens of thousands more are expected to be dragged into fuel poverty. She said much of the Government's strategy to improve the efficiency of housing is sensible and good, but there is no guarantee of funding and it is too reliant on feeble proposals like loft insulation. It is a start but it's not enough, and these measures would be absolutely inadequate to solving the problem.

She was speaking at a meeting organised by the Existing Homes Alliance Scotland, a coalition of groups calling for current housing stock to be upgraded. It includes environmental, housing, and consumer groups, and the building industry. Elizabeth Leighton of WWF Scotland, which is in the alliance, said: "The Scottish Government has a real opportunity through its strategy to address the dual problems of climate change and fuel poverty, while at the same time winning thousands of jobs. We welcome the ambitions set out in the strategy - but fear it will not be backed up by enough funding to do the job." (10) Infrastructure Secretary Alex Neil, said: "The Scottish Government is using all available mechanisms within its limited devolved powers to tackle fuel poverty in Scotland. (11)

Meanwhile the NDA is consulting on a Strategy Paper on Intermediate Level Waste Storage Solutions in Central and Southern Scotland. A key principle of the Strategy is that centralised and multi-site

approaches should be considered where it may be advantageous. (12) The NFLA's response is available on its website. (13)

- (1) NFLA Press Release 14th August 2012
http://www.nuclearpolicy.info/docs/news/NFLA_PR_Scotland_energy_report.pdf
- (2) http://www.nuclearpolicy.info/docs/briefings/NFLA_Briefing_99_Scottish_energy.pdf
- (3) Herald 14th August 2012 <http://www.heraldscotland.com/news/home-news/risky-nuclear-plans-under-fire.18575358>
- (4) Largs & Millport Gazette 5th Sept 2012
<http://www.largsandmillportnews.com/opinion/blogs/articles/2012/09/05/435024-more-nuclear-future-for-hunterston/>
- (5) Telegraph 9th Sept 2012 <http://www.telegraph.co.uk/finance/newsbysector/energy/9530446/EDF-considers-nuclear-plant-reprieve.html>
- (6) Nucleonics Week 13th Sept 2012
- (7) Herald 10th Sept 2012 <http://www.heraldscotland.com/politics/political-news/labour-accuses-snp-of-nuclear-u-turn.18831816>
- (8) Herald 11th Sept 2012 <http://www.heraldscotland.com/comment/letters/snp-should-back-nuclear-power.18845925>
- (9) SNP Press Release 10th Sept 2012 <http://www.snp.org/media-centre/news/2012/sep/nuclear-attack-backfires-labour>
- (10) Herald 3rd September 2012 <http://www.heraldscotland.com/news/home-news/feeble-snp-blamed-as-fuel-poverty-soars.18764532>
- (11) Herald 4th September 2011 <http://www.heraldscotland.com/politics/political-news/ministers-hit-back-over-fuel-poverty.18772118>
- (12) NDA 22nd August 2012 <http://www.nda.gov.uk/news/ilw-storage-scotland.cfm>
- (13) NFLA Response 17th September 2012
http://www.nuclearpolicy.info/docs/radwaste/NFLA_RWB_35_Scottish_ILW.pdf

9. All Gas and Politics

The row within the UK government over energy policy started up again after a break for the summer when former Tory environment secretary Lord Deben (John Gummer) the new chairman of the Committee on Climate Change (CCC) took the highly unusual step of writing publicly to the prime minister, warning that the government was in danger of breaching its own commitments on climate change through its strong backing for new gas-fired power stations. He pointed out that an extensive use of gas-fired generation "*would be incompatible with meeting legislated carbon budgets [and] unabated gas-fired generation could therefore not form the basis for government policy*". (1)

Osborne and his advisers want to increase the share of gas in the electricity mix because it is a quick way to build new power-generating capacity and because they believe that the price of gas is likely to fall sharply in future. However, that assumption does not fit with analysis by the International Energy Agency and other authorities, which have suggested that the price of gas is likely to continue to rise.

The growing split is not just about gas vs renewables, but also about the wider role of green energy in getting us out of the recession. Chief Secretary to the Treasury, Liberal Democrat, Danny Alexander will table a motion at the party's autumn conference that explicitly criticises Conservative opposition to green policies. The debate, titled *Generating Growth and Jobs in a Time of Austerity*, states that the conference "remains concerned by" a number of policies backed by Lib Dem's coalition partners, including "*the refusal of the Conservatives to acknowledge that investing in carbon-reducing technologies has the potential to make an important contribution to long-term growth*". (2)

Given his ambition to lead the "Greenest Government ever", it was hoped that David Cameron would join the side opposing Osborne. But his Cabinet reshuffle did not bode well. He axed former Energy Minister Charles Hendry and replaced him with John Hayes MP who has opposed wind farms in his constituency, and described wind turbines as a "*terrible intrusion on our flat fenland landscape*". (3)

The new environment secretary is Owen Paterson who reportedly told the Cabinet that it should end all energy subsidies, such as those for wind and solar power, and fast-track shale gas exploitation, and has spoken against wind farms and the new pylons needed to carry their power to the national grid. His appointment marks a sharp lurch away from the green-minded policies which sheltered in the environment department and a significant weakening of the green voice at the Cabinet table. (4) He is also thought to be a climate change sceptic. (5)

- (1) Guardian 13th Sept 2012 <http://www.guardian.co.uk/environment/2012/sep/13/gas-government-row-energy?intcmp=122>
For more detail see Guardian 14th Sept 2012
<http://www.guardian.co.uk/environment/blog/2012/sep/14/government-gas-plan-carbon-targets>
- (2) Business Green 13th August 2012 <http://www.businessgreen.com/bg/news/2198260/coalition-rift-widens-as-alexander-prepares-green-attack-on-osborne>
- (3) Business Green 4th September 2012 <http://www.businessgreen.com/bg/news/2202876/charles-hendry-axed-from-energy-minister-role>
- (4) Guardian 4th Sept 2012 <http://www.guardian.co.uk/environment/damian-carrington-blog/2012/sep/04/environment-owen-paterson-selman-reshuffle?newsfeed=true>
- (5) Telegraph 4th Sept 2012 <http://www.telegraph.co.uk/news/politics/9520174/Owen-Paterson-becomes-new-Environment-Secretary.html> and Carbon Brief 4th Sept 2012
<http://www.carbonbrief.org/blog/2012/09/with-an-coalition-fight-brewing-over-energy-policy.-meet-owen-paterson.-your-new-environment-secretary>