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1. Small Reactors and the UK's Long-Term Nuclear Strategy.

The Government's long-term nuclear strategy envisages making the UK a 'top table' nuclear nation, working in international partnerships leading the direction of future technology advances across the nuclear fuel cycle and being a key partner in commercialising new reactor-types such as Small Modular Reactors (SMR) worldwide. (1)

A nuclear research and development programme has been sketched out which would give the UK the option of promoting a high-nuclear scenario for the country with up to 75GW of nuclear capacity in 2050 providing 86% of the UK's electricity supply. (2) This would require an eye watering 30GW of new capacity to be built between 2030 and 2040 and another 30GW between 2040 and 2050, and newer fission technologies such as small modular reactors (SMRs) or Generation IV (mainly fast) reactors. Spent fuel reprocessing, fusion reactors and alternative fuel cycles (such as Thorium) might also be needed. While to most commentators this would sound like a nuclear fantasy, unfortunately the Coalition Government is not looking seriously at alternative non-nuclear energy strategies. (3)

In the Irish Republic a Green Paper on Energy, published for consultation in summer 2014, asked whether it might now be time to consider introducing a small nuclear reactor to replace the Moneypoint coal-fired power station and to test public acceptance of nuclear power. (4)

A recent House of Commons Energy and Climate Change Committee investigation into small reactors looked at SMRs but also PRISM reactors - 311MW sodium-cooled fast reactors being promoted as a way of using up the plutonium stockpile at Sellafield – and reactors fuelled by thorium rather than uranium.

Small Modular Reactors (SMRs)

SMR proponents suggest that mass production of modular reactors could reduce costs, but others agree that SMRs are likely to have higher costs per unit of output than conventional reactors. (5) Even if SMRs could eventually be more cost-effective than larger reactors due to mass production, this advantage would only come into play if large numbers of SMRs were ordered. But utilities are unlikely to order an SMR until they are seen to produce competitively priced electricity. This Catch-22 suggests the technology will require significant government financial help to get off the ground.

The Washington-based Institute for Energy and Environmental Research (IEER) says mass production could create new reliability vulnerabilities – if one reactor is discovered to have a fault, all other reactors manufactured in the same facility are likely to have the same fault, so all would have to be taken off-line at the same time. Millions of cars, presumably made to high quality control standards, for instance, are routinely recalled. Additionally IEER has serious concerns in relation to both safety and proliferation. (6) By spreading SMRs around the globe we will increase the proliferation risk because safeguarding spent fuel from numerous small reactors would be a much more complex task than safeguarding fewer large reactors. (7)



Having failed to make much progress in the US, small reactor vendors were given an opportunity to present their case in the UK when the House of Commons Energy and Climate Change Committee announced an inquiry into small reactors in March 2014. (8) The Committee took evidence from NuScale and Babcock & Wilcox, but also from GE Hitachi on PRISM reactors. The committee published its report on 17th December 2014. (9)

The MPs want the Government to work with industry to better understand the economics of Small Modular Reactors (SMRs) and set out a clear explanation of the conditions under which they might become cost competitive in the UK. The report says it will be important to understand the future cost comparison with large-scale nuclear reactors as well as the comparison with other small-scale energy generation or demand management.

Deployment of SMRs is likely to be achieved through sharing the costs between the public and private sector and the Committee would like to see the Government steering industry towards deploying a demonstrator SMR in the UK. Government should help to establish the right conditions for investment in SMRs, for example through supporting the regulator to bring forward approvals in the UK, and by setting out a clear view of siting options. It might take six years to give regulatory approval (including a site-specific licence) for a small modular reactor. The Committee is calling on DECC to ensure that the Office for Nuclear Regulation is adequately resourced to support SMR developers in the early stages of preparing their designs for approval. (10)

Speaking at the Nuclear New Build conference, shadow energy minister Tom Greatrex warned the government that *"no one, including the Chancellor as he drafts his Autumn Statement, should be fooled into thinking that small nuclear reactors are somehow the answer to all our energy needs."* But he did concede that there are *"many opportunities" for small and medium scale reactor technologies*". (11)

Government Response

On 14th July 2014 the UK's outgoing Minister for Business and Energy, Michael Fallon, told Parliament that the Government was *"awaiting the outcome of a feasibility study, led by the National Nuclear Laboratory [NNL] with the support of a consortium formed from industry. The study will make initial recommendations on the economic, technical and commercial case for SMRs, and will inform the evidence base for any further development or action."* (12)

The NNL feasibility study was published in December 2014. It concluded that the UK has an opportunity *"to regain technology leadership"* in SMRs. It said there is a very significant market for SMRs in places where large reactors would be unsuitable and calculates the size of the market to be approximately 65-85 GW of new capacity by 2035, valued at £250-£400 billion, with demand in the UK of around 7 GW by then. NNL claims that *"first-of-a-kind" SMRs could be cost comparable with conventional nuclear build, with the potential to become more cost competitive as more are built. But further evidence is required to make a policy decision or for business to make an investment. Paul Howarth, NNL managing director, said the feasibility report is "an important step on the way towards recognizing the role which SMR designs can play and helping to capitalize on the opportunities offered."* (13)

In March 2015 the UK Government responded to the Select Committee saying that it recognised the long-term potential of SMRs as an additional source of generation, which is why it



commissioned the SMR feasibility study from the National Nuclear Laboratory. (14) That study recommended a more in-depth analysis to establish the robust evidence base needed to enable a policy decision on SMRs and help Government decide whether it wants to pursue a UK SMR programme. This further analysis has now been commissioned. It will look at what is needed to bring SMRs to market, and further financial analysis to clarify the economic case.

The Select Committee said it was surprised to learn that it might take six years to give regulatory approval for an SMR (including a site-specific licence). The Government said it is not the case that SMRs would necessarily be easier or faster to assess because of their size. Some designs use novel technologies which would require regulators to build their knowledge of the design. Public confidence in SMRs would suffer if it were perceived that standards were being lowered to facilitate speedier design assessment.

There is already a provisionally agreed schedule which provides for one SMR design – following a selection process and subject to Government policy decisions – to potentially begin a Generic Design Assessment (GDA) in 2017. The Government is expecting one of the eight sites on the Nuclear National Policy Statement to be proposed. At some stage though, it says, an exercise to identify new sites, both for new full-scale nuclear power stations and potentially for SMRs, is likely to be necessary, and is considering what form this might take.

The Government says it recognises the importance of engaging with the public on SMRs, because there is a potential for these reactors to be distributed in greater numbers across the country in closer proximity to centres of population.

Waste Implications

The Committee on Radioactive Waste Management (CoRWM) has looked at the waste implications of a 75GW programme which would be equivalent to a programme of over 50 new large-scale reactors. It said that since the Government has, so far, been mainly talking about the waste inventory from only a 16GW nuclear new build programme, it should consider defining a maximum size for a deep geological facility (GDF) and make clear that we might need multiple GDFs. (15) The Environment Agency (EA) has already set a limit on the risk that may be caused by the burial of radioactive wastes of 10^{-6} (i.e. one in a million). (16) Figures from the NDA Disposability Assessment Report for waste arising from new EPR reactors (17) suggest that a programme equivalent to 50 large reactors would require around four GDFs.¹ Despite the obvious waste management problems caused by such a programme, the Government continues to fund research into new reactor types and promote its long-term nuclear strategy.

Conclusions

Disquiet over the high cost and delays at Hinkley Point C – some of it from within the nuclear community – and signs of a faltering global nuclear renaissance – have led to questioning whether the long-established conventional wisdom that bigger units are cheaper than small reactors is any longer true. The US Department of Energy (DOE) has built up a momentum for

¹ The NDA Disposability Assessment suggests “...a risk of 5.3×10^{-7} per year for the lifetime arisings of a fleet of six EPR reactors” This is more than half the total risk of 10^{-6} allowable for a GDF. Clearly a GDF with spent fuel from 12 new EPR reactors would exceed the risk targets set by the EA for a single GDF. So 50 reactors would require at least 4 dumps.



SMRs by throwing hundreds of millions of dollars in cost-shared funding to jump-start the industry.

For some in the industry SMRs are seen as a way to reduce costs and speed up construction by using large-scale standardized manufacturing that will churn out dozens, if not hundreds, of identical plants, each of which would ultimately produce cheaper kilowatt-hours than large one-off designs. But first someone needs to build a massive supply chain. Money for that would presumably come from customer orders - if there were any. The problem is it appears that no one actually wants to buy one. (18)

So what are prospects for small reactors, both in the UK and globally? Former CoRWM Chair, Professor Gordon Mackerron says no SMR (properly defined) has yet been commercialised anywhere in the world, and work on them has been waning because the developers cannot find a market. This is unsurprising as their cost per unit of output is higher than the already expensive conventional, larger reactors, unless hundreds can be sold to give manufacturing economies. Mackerron says we shouldn't expect a significant contribution from SMRs by 2050. (19)

None of the designs, including the most credible, which are based on scaled-down versions of currently deployed PWR technology, is yet ready. NNL speaks of 'detailed technical challenges' not yet resolved. It is therefore no surprise that no-one has yet built a single SMR let alone made a commitment to building the large numbers that would be needed to make the economic case remotely credible. And the safety licensing process that will need to follow design completion would, according to the Chief UK nuclear inspector, take up to 6 years in the UK.

The cost of SMRs is essentially unknowable at the moment, but there is evidence to suggest they will be even more expensive than existing reactors. Despite this NNL suggests two scenarios, 'niche' and 'parity' (of cost). It concludes that the world market could be only just over 5 GW in 2035 in its 'niche' scenario but 65-85GW in 'parity'. It then suggests a potential UK market of between 7GW and 21GW in 2035. Mackerron says this latter number is frankly not credible under any conceivable circumstances. These hoped-for UK markets are also linked to the idea that the UK could become a major technological player in SMR technology, a view that seems tinged almost with fantasy, given that all significant SMR development to date has been outside the UK. In the USA for example the Obama administration has pledged a further \$217 million to NuScale, following substantial earlier Federal funding for two SMR designs. (20)

The fact that the UK Government is already considering what sort of process might be needed to propose new sites for nuclear reactors shows that it is serious about its long-term nuclear strategy. What is most worrying about these future nuclear scenarios is that the UK Government is failing to develop alternative non-nuclear scenarios to replace them when they turn out to have been a delusion which they surely will.

The Nuclear Free Local Authorities (NFLA) has published a detailed assessment of the prospects for Small Modular Nuclear Reactors (SMRs) – a technology mooted for use in both the UK and the Republic of Ireland.

NFLA Press Release 17th March 2015

http://www.nuclearpolicy.info/docs/news/NFLA_Small_Nuclear_Reactor_report.pdf

Small Modular Nuclear Reactors, the UK's long-term nuclear strategy and Ireland's future energy mix debate. NFLA 17th March 2015

http://www.nuclearpolicy.info/docs/nuclearmonitor/NFLA_New_Nuclear_Monitor_No37.pdf

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1. Long-term Nuclear Energy Strategy, BIS & DECC March 2013
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/168047/bis-13-630-long-term-nuclear-energy-strategy.pdf
 2. Nuclear Energy Research & Development Roadmap: Future Pathways, DECC, March 2013
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/168043/bis-13-632-nuclear-energy-research-and-development-roadmap-future-pathway.pdf
 3. Guardian 26th March 2013 <http://www.guardian.co.uk/environment/2013/mar/26/nuclear-free-future-energy-strategy>
 4. See NFLA Briefing July 2014
[http://www.nuclearpolicy.info/docs/briefings/A238_\(NB124\)_Irish_energy_paper.pdf](http://www.nuclearpolicy.info/docs/briefings/A238_(NB124)_Irish_energy_paper.pdf)
 5. “*The Economic Failure of Nuclear Power and the Development of a Low-Carbon Electricity Future: Why Small Modular Reactors Are Part of the Problem, Not the Solution,*” by Dr Mark Cooper, May 2014
<http://www.nirs.org/reactorwatch/newreactors/cooper-smrsaretheproblemnotthesolution.pdf>
 6. Light Water Designs of Small Modular Reactors: Facts and Analysis by Arjun Makhijani, IEER, September 2013. <http://ieer.org/wp/wp-content/uploads/2013/08/SmallModularReactors.RevisedSept2013.pdf>
 7. IEER News Release 8th August 2013 <http://ieer.org/resource/nuclear-power/light-water-designs-of-small-modular-reactors-facts-and-analysis/>
 8. House of Commons 4th March 2014 <http://www.parliament.uk/business/committees/committees-a-z/commons-select/energy-and-climate-change-committee/inquiries/parliament-2010/small-nuclear-power/>
 9. Small Nuclear Power, Energy and Climate Change Committee, December 2014.
<http://www.publications.parliament.uk/pa/cm201415/cmselect/cmenergy/347/347.pdf>
 10. Parliament 17th Dec 2014 <http://www.parliament.uk/business/committees/committees-a-z/commons-select/energy-and-climate-change-committee/news/report-small-nuclear-power/>
 11. Utility Week 21st Nov 2014 <http://www.utilityweek.co.uk/news/labour-small-nuclear-not-the-answer/1074592>
 12. Hansard 14th July 2014 Cm 457W
<http://www.publications.parliament.uk/pa/cm201415/cmhansrd/cm140714/text/140714w0001.htm#14071445000055>
 13. Small Modular Reactors Feasibility Study, National Nuclear Laboratory, December 2014
<http://www.nnl.co.uk/media/1627/smr-feasibility-study-december-2014.pdf> (see also World Nuclear News 4th Dec 2014 <http://www.world-nuclear-news.org/NN-National-Nuclear-Laboratory-urges-UK-investment-in-SMRs-4121401.html>)
 14. Small nuclear power: Government Response to the Committee's Fourth Report. Energy & Climate Change Committee, 5th March 2015
<http://www.publications.parliament.uk/pa/cm201415/cmselect/cmenergy/1105/1105.pdf>
 15. CoRWM response to GDF Siting Consultation December 2013
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263893/CoRWM_Response_to_GDF_Siting_Consultation_December_2013_CoRWM_doc_3138.pdf See also Rob Edwards 12th Dec 2013 <http://www.robedwards.com/2013/12/uk-government-plan-for-up-to-50-new-nuclear-reactors.html> and Observer 21st Dec 2013
<http://www.theguardian.com/environment/2013/dec/21/nuclear-plants-energy-plans>

16. Environment Agency (February 2009) Geological Disposal Facilities on Land for Solid Radioactive Wastes: Guidance on Requirements for Authorisation, page 46 para 6.3.10
<http://publications.environment-agency.gov.uk/pdf/GEH00209BPJM-e-e.pdf>
17. NDA (22nd Jan 2010) Generic Design Assessment: Disposability Assessment for wastes and spent fuel arising from operation of the UK EPR. Part 1 Main Report. para 5.4 page 97.
18. Power Mag 1st Sept 2014 <http://www.powermag.com/what-went-wrong-with-smrs/>
19. Sussex Energy Group 17th Oct 2014 <https://sussexnrggrp.wordpress.com/2014/10/17/response-to-pattersons-unremarkable-and-nonsensical-speech/>
20. Sussex Energy Group 2nd March 2015
<http://blogs.sussex.ac.uk/sussexenergygroup/2015/03/02/small-modular-reactors-the-future-of-nuclear-power/>



2. AP1000s – The Stalled Nuclear Renaissance

As the Generic Design Assessment (GDA) of the Westinghouse AP1000 reactor design re-starts, it's worth having a look at how the design has been fairing in the rest of the world.

The design re-entered the GDA process in June 2014 but technical assessment work didn't recommence until January 2015. A revised resolution plan from Westinghouse for the 51 outstanding GDA issues has now been agreed. These issues will need to be resolved before ONR and Environment Agency can make a decision on whether to issue a Design Acceptance Confirmation and Statement of Design Acceptability for the AP1000 reactor design. Westinghouse is aiming to complete the GDA in early 2017 but this will be dependent on the timely delivery of high quality documentation for regulatory assessment. (1)

Eight AP1000 units are currently under construction worldwide: two each at the Vogtle and V.C. Summer sites in the U.S. and the Sanmen and Haiyang sites in China. Shareholder agreements have been signed in the past few months for the development of AP1000 plants at the Moorside site in the United Kingdom and the Kozloduy site in Bulgaria. (2)

Four other reactors in the US are waiting for a construction and operating licence (COL), but these are not expected until next year and the year after. Four other American AP1000s have been suspended indefinitely and another two have applied for an Early Site Permit.²

Of the AP1000 reactors under construction, the two in Georgia are both 3 years late and estimated costs have gone up from \$14.3bn to around \$16.5bn. (3) The two in South Carolina are both two years late, and delays have added \$1.2bn to the original \$10bn cost estimate. (4)

In China the four AP1000s under construction are all around 2 years late. The two reactors under construction at Sanmen were expected to cost 40.1 billion yuan (\$6.4bn). This is now estimated to have increased by 24%. (5)

At Moorside in Cumbria the NuGen consortium wants the first of three AP1000 reactors to come online in 2024. (6)

An American nuclear expert warned a public meeting in Keswick that AP1000 reactors need a \$100m (£68m) filter to safeguard against a leak that would turn the region into "Chernobyl on steroids". Arnie Gunderson lifted the lid on safety violations at the nuclear firm in 1990 - he claimed to have found radioactive material in a safe. Mr Gunderson told *The Independent* that he is concerned by designs for three reactors proposed for a new civil nuclear plant in Cumbria. Mr Gunderson believes the AP1000 design is susceptible to leaks. He said: "Evacuation of Moorside would have to be up to

² There are three regulatory initiatives on the US which in recent years have enhanced the prospects of building new plants. First is the design certification process, secondly provision for early site permits (ESPs) and thirdly the combined construction and operating licence (COL) process. All have some costs shared by the DOE.



50 miles. You could put a filter on the top of the AP1000 to trap the gases - that would cost about \$100m, which is small potatoes. "If this leaks it would be a leak worse than the one at Fukushima. (7)

		Construction Started	Target for Start of Operation	Delay
Vogtle 3, GA	South Nuclear Operating Co.	March 2013	Q2 2019	3 years late
Vogtle 4, GA	Southern Nuclear Operating Co.	Nov 2013	Q2 2020	3 years late
V.C. Summer2, SC	Southern Carolina Electric & Gas	March 2013	End 2018	2 years late
V.C. Summer3, SC	Southern Carolina Electric & Gas	Nov 2013	Late 2019	2 years late
William States Lee, SC x2	Duke Energy	COL target date 2016	2024 2026	
Turkey Point, FL x2	Florida Power & Light	COL target date 2017	2027 2028	
Levy County, FL x2	Duke Energy			Suspended indefinitely
Shearon Harris, NC x2	Duke Energy			Suspended indefinitely
Green River, UT x2	Blue Castle/Transition Power Development			Early Site Permit application expected 2016
China				
Sanmen 1	State Nuclear Power Technology Corporation	April 2009	Originally August 2013 Now 2016	2-3 years late



	(SNTPC).			
Sanmen 2	State Nuclear Power Technology Corporation (SNTPC).	Dec 2009	Originally June 2014 Now 2016	2 years late
Haiyang 1	State Nuclear Power Technology Corporation (SNTPC).	Sept 2009	May 2014 Now 2016	2 years late
Haiyang 2	State Nuclear Power Technology Corporation (SNTPC).	June 2010	March 2015 Now 2016	1 – 2 years late

1. ONR 12th March 2015 <http://content.govdelivery.com/accounts/UKHSEONR/bulletins/f753f2>
2. Westinghouse 20th August 2014 <http://www.westinghousenuclear.com/About/News/View/ArticleId/447/Westinghouse-Blue-Castle-Working-to-Bring-Benefits-of-AP1000-Plant-Technology-to-Western-US>
3. Taxpayers for Common Sense 19th Feb 2015 <http://www.taxpayer.net/library/article/doe-loan-guarantee-program-vogle-reactors-34> and Power Source 10th Feb 2015 <http://powersource.post-gazette.com/powersource/companies-powersource/2015/02/10/Will-Westinghouse-pay-for-another-nuclear-delay/stories/201502100014>
4. Nuclear Intelligence Weekly 9th Jan 2015 http://www.bluecastleproject.com/files/news_items/159-010915%20Newbuild%20Blue%20Castle%20Twin%20Buttes%20Work%20on%20Nuclear%20Plans.pdf and World Nuclear News 3rd October 2014 <http://www.world-nuclear-news.org/NN-Cost-of-Summer-AP1000s-increases-0310144.html> The State 12th March 2015 http://www.thestate.com/2015/03/12/4042534_sceg-cost-of-2-new-reactors-up.html
5. South China Morning Post 7th October 2013 <http://www.scmp.com/business/china-business/article/1325973/china-nuclear-plant-delay-raises-safety-concern>
6. New Civil Engineer 12th March 2015 <http://www.nce.co.uk/news/energy/moorside-nuclear-power-plant-moves-a-step-closer/8679918.article>
7. Independent 16th March 2015 <http://www.independent.co.uk/news/business/news/nuclear-expert-arnie-gundersen-warns-of-chernobyl-on-steroids-risk-in-uk-from-proposed-cumbria-plant-10109930.html>



3. Will Hinkley Point C ever get built?

The Stop Hinkley Campaign, along with Friends of the Earth, Greenpeace and the Nuclear Free Local Authorities, has written to the Shadow Secretary of State for Energy and Climate Change, Caroline Flint, to ask her to commit to re-examining the deal between the UK Government and EDF Energy regarding Hinkley Point C in the event of the Labour Party winning the next election. (1)

Although Tom Greatrex, Labour's shadow energy minister, has recently said he believes nuclear power must remain a part of the UK's energy mix, he has also called for the Hinkley deal to be scrutinised by the National Audit Office (NAO) to make sure it's the best deal for the UK taxpayer. (2) And Baroness Worthington, shadow spokesperson for energy and climate change in the House of Lords has slammed the government's strike price deal with EDF saying it is having a "massive destabilising" effect on the energy market and causing a "crisis of confidence" in the future of energy production in the UK. (3)

The current Secretary of State for Energy and Climate Change recently pointed out that the NAO wouldn't normally examine a deal like this until after it has been agreed. (4) So there is unlikely to be any further examination of the deal in the light of recent events in time to prevent it being implemented, unless a new Government commits to one.

Roy Pumfrey, spokesperson for Stop Hinkley, said: *"The recent renewable energy auction held under the new "contract for difference" pricing mechanism has now shown that without doubt, most renewable energy is cheaper than nuclear power and costs are continuing to fall. The least that the Labour Party can do now is to commit to re-examining the Hinkley deal before consumers are forced to pay for overpriced and unnecessary electricity for the next 35 years."* (5)

Jonathon Porritt says he has always thought that the two proposed new reactors at Hinkley Point will never get built. Now he's absolutely convinced they'll never get built. As we reported last month EdF has confirmed that an investment decision has been postponed until after the General Election. But the list of problems still to be resolved is daunting. First, it needs to be able to sign final deals with co-investors, including the Chinese, who are beginning to cut up rough. Then it needs final confirmation from the European Commission and the UK Government for a whole load of issues regarding the waste transfer contract. It also needs to finalise a £10bn loan guarantee from the Treasury. And, despite months of discussions, it needs to conclude negotiations with the UK Government regarding the subsidy contract. (6)

Influential commentator Dr Philip Johnstone, Research Fellow at the Science Policy Research Unit, says: *"Every wish of the nuclear industry has been granted by the UK Government. The British planning system has been 'streamlined', with nuclear a key inspiration of the need to speed things up. The Government has created one of the best institutional contexts in the world for developing nuclear, with a new Office for Nuclear Regulation and the Office for Nuclear Development, and has ensured that nuclear regulators are equipped to pre-license designs for new build. As well as this, a strategic siting assessment and environmental assessment were carried out, further 'streamlining' the process of new nuclear construction. Electricity Market Reform has been brought in, where, despite being a mature technology, nuclear was granted Contracts for Difference at double the*

current market rate for the next 35 years.” Yet the removal of all these obstacles has done absolutely nothing to speed up or make cheaper the construction of nuclear power. (7)

Luxembourg has confirmed that it will back Austria in filing a lawsuit against the European Commission’s decision to allow billions of pounds of State Aid subsidies for Hinkley Point C. (8) And a German electricity supply company - Greenpeace Energy - has also decided to take legal action against the decision with the help of the renowned German energy law firm Becker Büttner Held (BBH). A number of municipal energy utilities, such as Stadtwerke Schwäbisch Hall, are considering joining the lawsuit. With a total capacity of 3,260 MW, about 7% of the highly subsidised electricity generated in Great Britain will then enter the EU’s internal electricity market. As a consequence, the Hinkley Point model will affect the European electricity market. Furthermore, the Commission’s decision provides a kind of blueprint for the specific interests of Germany’s neighbouring countries such as Poland and the Czech Republic, as well as those of Slovakia and Slovenia – also because the British government is already planning the construction of further nuclear power plants within the scope of the CfD mechanism. (9)

But Porritt says regardless of what happens with the legal challenges, it looks like the beginning of the end for Hinkley anyway. And here’s why:

The cost of the Hinkley Point project has gone up and up over the last two years, and shows little indication of stabilising where it now is;

- The calamitous failure of EDF (and its partner Areva) to deliver the first two EPR projects at Olkiluoto in Finland and Flamanville in France has dragged on and on;
- The two Chinese co-investors (the China National Nuclear Corporation and China General Nuclear Power) have got more and more leery about the EPR reactor design;
- The French Government has become more and more outspoken about its reluctance to go on bailing out either EDF or Areva, as their balance sheets go from bad to worse;
- Areva is now in such a bad state (with a €4.8bn loss in 2014) that it looks as if it might have to withdraw as a co-investor in the Hinkley project - a state of affairs pretty much confirmed by EDF’s CEO; (10)
- Worse yet, Areva has announced that it wants to suspend indefinitely any further work on the approval process for its EPR (the same reactor design as Hinkley) in the USA, which sends a pretty strong signal that the EPR in the USA is as good as dead and buried;
- To cap it all, the UK Government has itself further muddied the waters by seeking approval from the EU to hold a 'golden share' in the Hinkley project. This would give them special voting rights, and could theoretically allow Ministers to block the transfer of ownership of Hinkley if EDF decided that it wanted to get out. (Worried about the Chinese taking total control, perhaps?!) Experts believe this may completely undo the case that the UK Government made to the Commission last year for approval of those huge subsidies. (11)
- The costs of solar and wind continue to fall, year on year, with every indication that there’s a further 40% reduction to come over the next few years.



Porritt concludes that

"We've already paid a very significant price for Labour's sad surrender to the seductive lies of the nuclear industry, and for this Coalition Government's near-incomprehensible decision to pursue the EPR reactor design for Hinkley Point. Between them, they've dug a hole already so deep that they have no idea what to do other than to keep on digging. So let's just hope that those Austrians stick to their guns with their legal challenge, for this is by far the longest and by far the most robust rope-ladder up which those benighted politicians ... will soon - ever so thankfully - be able to climb."

Molly Scott Cato, Green Party MEP for the South West, has written to EU competition commissioner Margrethe Vestager over the funding "shambles". The Greens believe ministers admitting to "initial discussions" over a share in Hinkley Point C alters the UK's state aid case, which has to meet strict rules. Claude Turmes, Green MEP from Luxembourg, which has joined Austria in the legal challenge, said: *"Recent studies show the huge levels of public funding that nuclear energy is benefiting from. We call on Commissioner Vestager to open a broad sectoral investigation on state aid in the nuclear sector. We need to ensure that all external costs related to decommissioning and waste management are no longer a debt for future generations of taxpayers but borne by the nuclear industry."* (12)

Meanwhile talks are under way aimed at attracting additional investors for the Hinkley project. The managing director of nuclear new build for EDF Energy, Humphrey Cadoux-Hudson, said the company "is talking to other potential equity partners. (13)

New figures show that the Anholt offshore wind farm in the Kattegat between Denmark and Sweden had an impressively high capacity factor of 50% last year. In fact, in an average year it is more like 75%. This means that if just 10% of the Kattegat region were developed for offshore wind, it would deliver 40% more power than the proposed Hinkley nuclear power station at a lower cost. (14)

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1. Stop Hinkley 3rd March 2015 <http://www.stophinkley.org/PressReleases/pt150303.pdf>
 2. Financial Times 20th Nov 2015 <http://www.ft.com/cms/s/0/41934cb8-70ca-11e4-9129-00144feabdc0.html>
 3. Building 3rd March 2015 <http://www.building.co.uk/5074163.article>
 4. See Q57 & 58 here <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/energy-and-climate-change-committee/decc-annual-report-and-accounts-201314/oral/17713.pdf>
 5. Bridgwater Mercury 13th March 2015 http://www.bridgwatermercury.co.uk/news/11851304._/
 6. Ecologist 11th March 2015 http://www.theecologist.org/blogs_and_comments/Blogs/2787780/the_end_is_nigh_last_rites_for_hinkley_c.html
 7. Sussex Energy Group 17th Feb 2015 <https://blogs.sussex.ac.uk/sussexenergygroup/2015/02/17/the-politics-of-the-uk-nuclear-renaissance/> See also 11th March <http://blogs.sussex.ac.uk/sussexenergygroup/2015/03/11/jonathan-porritt-on-hinkley-c-the-beginning-of-the-end/>



8. Power Engineering International 10th Mar 2015
<http://www.powerengineeringint.com/articles/2015/03/luxembourg-confirms-opposition-to-hinkley-point-nuclear-power-plant-deal.html>
9. Becker Buttner-Held 12th March 2015 <http://www.beckerbuettnerheld.de/en/article/state-aid-for-hinkley-point-nuclear-power-plant-bbh-to-prepare-a-lawsuit-against-the-eu-commission/> and Ecologist 5th March 2015
http://www.theecologist.org/News/news_round_up/2780807/greenpeace_energy_to_launch_legal_challenge_to_uk_nuclear_subsidies.html
10. Telegraph 5th March 2015 <http://www.telegraph.co.uk/finance/newsbysector/energy/11453149/EDF-Areva-investment-not-existential-for-Hinkley-Point.html>
11. Independent 5th March 2015 <http://blogs.sussex.ac.uk/sussexenergygroup/2015/03/11/jonathan-porrit-on-hinkley-c-the-beginning-of-the-end/>
12. Western Morning News 6th March 2015 <http://www.westernmorningnews.co.uk/Green-Party-says-funding-flaw-halt-Somerset/story-26129972-detail/story.html>
13. Nuclear24 4th March 2015 <http://www.nuclear24.com/2360/s/top-stories>
14. Energy Post 3rd March 2015 <http://www.energypost.eu/offshore-wind-kattegat-unique-opportunity-europe/>



4. Are Dounreay & Aldermaston contractors heading the same way as NMP at Sellafield?

The UK Government gave assurances in January after stripping the Nuclear Management Partners (NMP) consortium of its £9billion contract to clean-up Sellafield that the privatised contractor arrangements had “worked well” at Dounreay. Energy Secretary Ed Davey was asked by John Thurso, MP for Caithness, Sutherland and Easter Ross, for a reassurance that there were no concerns at Dounreay similar to those which had emerged at Sellafield.

Davey said at Dounreay: *“The contract has worked because it has been easier to specify the scope ... As a result, significant efficiencies have been made and significant savings to the taxpayer have been accrued, so the model has worked well on that site.”* (1)

Then on 27th February the John O’ Groat Journal reported on claims the Dounreay site is in turmoil and morale among staff is at rock bottom. Sources inside the plant told the local newspaper that some long serving employees *“can’t remember it being so bad”*. The workforce is concerned at the way the plant is being run while trade unions have submitted a letter of little or no confidence in the management and have been involved in talks to resolve the issues. Management and unions are trying to keep things low key because of what happened at Sellafield, but very little progress has been made on the list of issues raised by the Unions.

The Cavendish Dounreay Partnership – the private consortium which runs the site – is made up of Cavendish, CH2M Hill and URS which was part of the sacked Sellafield consortium. The insider said the truth is the NDA model is not working. Senior managers commute between Bristol and Wick, which doesn't help continuity, and the lead for each company think they are in charge. The NDA is worried that it has taken on too much at Sellafield having sacked NMP and taken over running the site itself. (2)

A copy of the letter from the Unions to the site’s managing director, Mark Rouse, now seems to have been obtained by *The Independent*. In it Dounreay workers accuse their managers of failing to keep them safe. It says workers have reported an *“increasing number of injuries”* and have *“serious concerns”* about the quality of new protective suits and other safety equipment. And they have *“no confidence in senior management”*. The letter was sent to Mr Rouse last November, six weeks after the sodium fire at the plant resulted in a serious radioactive leak. Staff warn that the situation at Dounreay is now similar to that of the mid-1990s, when a major safety audit had to be carried out. (3)

WWF Scotland director Lang Banks said it was 'deeply worrying' that inadequate protection measures are reportedly employed during the decommissioning process at the Caithness plant. (4) Dr Richard Dixon, Director of Friends of the Earth Scotland said *“Decommissioning Dounreay is no doubt a nightmare because of the ridiculous practices and shoddy record-keeping of the past, but the safety of the workers and protecting the environment must be the absolute priorities. The work at Dounreay will help other countries around the world deal with old nuclear sites, but the continuing problems at the site demonstrate the folly of ever building new nuclear reactors.”* (5)



Meanwhile, a 25 year contract to manage Britain's nuclear weapons stockpile may be torn up by the government amid spiralling costs and overruns. Concerns are mounting over poor performance on a series of key contracts at the Atomic Weapons Establishment (AWE), at Aldermaston, in Berkshire. The site is run by AWE Management, a venture split equally between the embattled outsourcer Serco, US engineer Jacobs and defence giant Lockheed Martin.

AWE Management was awarded a 10-year, £2.2bn contract to run the site in 2000, later extended to 2025. Taxpayers have pumped about £9bn into AWE since 2000. But industry sources say AWE is wrestling with delays on projects such as Pegasus, a new complex for enriching uranium that was valued at £634m in 2011. Pegasus was halted in January amid a review, according to a document from the Office for Nuclear Regulation. AWE is also said to be struggling with Project Mensa, a £734m facility for assembling and disassembling warheads. The fate of the contract is sensitive as negotiations over the renewal of the Trident nuclear deterrent will play a pivotal role in May's election. (6)

However the Sunday Times says AWE Management is expected to suffer a similar fate to Nuclear Management Partners at Sellafield but not until after the General Election.

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1. Aberdeen Press & Journal 14th Jan 2015
<https://www.pressandjournal.co.uk/fp/news/highlands/456404/minister-praises-dounreay-clean-up/>
 2. John O Groat Journal (not on web) 27th Feb 2015 <http://www.johnogroat-journal.co.uk/Home/>
 3. Independent on Sunday 15th March 2015 <http://www.independent.co.uk/news/uk/home-news/nuclear-waste-workers-at-dounreay-power-station-fear-for-their-safety-10108715.html>
 4. Herald 16th March 2015 <http://www.heraldscotland.com/news/environment/wwf-call-for-urgent-attention-to-dounreay-safety-concerns.120680080>
 5. The National 15th March 2015 <http://www.thenational.scot/news/workers-express-fears-over-safety-during-dounreay-decommissioning.1071>
 6. Sunday Times 15th March 2015
<http://www.thesundaytimes.co.uk/sto/business/Companies/article1531071.ece>



5. Sellafield Clean-Up Costs Jump by 30x Cumbria Council's Cuts

The cost of decommissioning and cleaning up Sellafield has increased by £5bn to £53bn, according to the National Audit Office. Margaret Hodge MP, chair of the Public Accounts Committee (PAC) which commissioned the report, said the cost hike was "astonishing." A year ago, the Nuclear Decommissioning Authority (NDA), said the cost would be £48bn. The work is also behind schedule, the report said. (1)

The NDA's work at Sellafield "*is not just costing more, it is also taking much longer than planned and, for 2014-15, it looks like work will be behind schedule for the fourth year running,*" said Ms Hodge.

Breaking the contract with Nuclear Management Partners will cost the public purse £430,000. Chris Jukes, regional officer of the GMB union, said: "*GMB has been absolutely clear all along that the NMP model did not work at Sellafield. Poor value for money, poor top NMP management and a lack of grip on key issues in an essential area for the UK energy sector, as well as the UK economy, have led to unbelievable decisions on expenditure.*" (2)

The Public Accounts Committee is furious. It summoned John Clarke, the NDA chief executive, Stephen Lovegrove, Permanent Secretary for the Department of Energy and Climate Change, and Paul Foster, Sellafield Ltd managing director, for a grilling. Since 2005, Sellafield has been arguably the world's most hazardous decontamination site, an £80bn-plus clean-up job that will take at least a century to complete. Workers and managers alike face a daily struggle with the horrendously complicated logistics of detoxifying more than 250 buildings in a mere two square mile site.

The National Audit Office report last week made the headlines for finding a £5bn increase in clean-up costs, but buried on page 17 was a rather alarming finding from 2014-15: "*One milestone – the appointment of a director in charge of security – was missed but this post has now been filled.*" David Lowry has written to Margaret Hodge, the PAC chair, demanding she gets answers on why such a key post was left unfilled. Apparently the appointment had been filled by the date set by the NDA, but there was a four-month delay getting the person in post, including time soaked up by the vetting process. In the meantime, there was an interim director and a dedicated team, so there were no security gaps. (3)

John Clarke told the PAC that estimates for the 100-year plus programme are likely to continue to undergo further revisions as we develop a greater understanding of the complexities and uncertainties of the Sellafield programme, and the technical approach required to tackle these unique facilities. (4)

Stephen Lovegrove admitted to not having "general confidence" that the escalating cost of cleaning up the Sellafield nuclear facility can be accurately forecast any time soon. The huge range in the current estimate for decontaminating the Cumbrian site – £88bn to £218bn – illustrates the "level of uncertainty" in the forecasts. He told MPs that it was "impossible to



know” the costs of the detoxification of one of the world’s most hazardous nuclear sites, a job that will not be completed until well into the 22nd century.

MPs wanted to know why the NDA had not simply terminated the NMP consortium’s deal when its contract came up for renewal in late 2013. Mr Clarke said that he did not have a “*proper analysis*” at the time on whether alternative options for running Sellafield would be workable. (5)

Eddie Martin, former Conservative leader of Cumbria County Council told the *Whitehaven News* that during his term of office, Cumbria County Council struggled to find £80m of savings and is still struggling to find another £80m. Think of the wonderful things we could achieve with £5bn, he said. On the other hand, we simply cannot ignore the ever-expanding volumes of nuclear waste, but the NDA really does seem to have an open cheque book; costs keep rising, spending spirals upwards and the budget increases, yet again. He concludes that Cumbria, despite the undoubted employment opportunities which Sellafield affords, is poorly rewarded for housing most of the nation’s deadly waste. And that is unjust. (6)

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1. BBC 4th March 2015 <http://www.bbc.co.uk/news/business-31725365>
 2. FT 4th March 2015 <http://www.ft.com/cms/s/0/20cd5208-c28c-11e4-a59c-00144feab7de.html>
 3. Independent 11th Mar 2015 <http://www.independent.co.uk/news/business/comment/mark-leftly-the-shambles-surrounding-sellafield-cleanup-continues-10099476.html>
 4. NDA 11th March 2015 <http://www.nda.gov.uk/2015/03/chief-executive-appears-before-public-accounts-committee/>
 5. Independent 12th Mar 2015 <http://www.independent.co.uk/news/business/news/ultimate-cost-of-sellafield-cleanup-cannot-be-forecast-10102380.html>
 6. Whitehave News 12th March 2015 <http://www.whitehavennews.co.uk/letters/you-say/copeland-s-reward-for-sellafield-is-unjust-1.1198431>



6. Sizewell, Belgium, cracks and all that.

On 13th February two leading materials scientists announced that thousand of cracks have been discovered in the reactor pressure vessels (RPVs) of two Belgian reactors, Doel 3 and Tihange 2. The RPV is the piece of equipment that contains the highly radioactive nuclear fuel core. The RPV is required to be integrally sound, with no risk of failure, because failure could result in a potentially catastrophic nuclear disaster.

According to the scientists, hydrogen from the water in the pressure vessel – which cools the nuclear fuel core – may be corroding the steel by injecting hydrogen atoms into the steel of the vessel itself, where it can accumulate and build up pressure, resulting in the steel blistering – effectively breaking up the pressure vessel from within. (1)

The material scientists said that the pervasive and unexpected cracking could be related to corrosion from normal operation, with potential implications for reactors worldwide. In a reaction to this, the Director General of the Belgian nuclear regulator, The Federal Agency for Nuclear Control (FANC), stated that, *"This may be a global problem for the entire nuclear industry. The solution is to implement worldwide, accurate inspections of all 430 nuclear power plants."* Greenpeace has called for immediate checks of nuclear power plants worldwide. (2)

One of the material scientists, Professor Bogaerts said: *"If I had to estimate, I would really be surprised if it ... had occurred nowhere else ... I am afraid that the corrosion aspects have been underestimated."*

Eloi Glorieux of Greenpeace Belgium says this: *"point(s) to a potentially endemic and significant safety problem for reactors globally. Nuclear regulators worldwide must require reactor inspections as soon as possible, and no later than the next scheduled maintenance shutdown. If damage is discovered, the reactors must remain shut down until and unless safety and pressure vessel integrity can be guaranteed. Anything less would be insane given the risk of a severe nuclear accident"*(3)

A renewed call went out for an early inspection of the RPV at Sizewell B after the discovery that the cracks could be the result of operation and not manufacture, as previously thought. (4)

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1. Greenpeace 17th Feb 2015 <http://www.greenpeace.org/international/en/news/Blogs/nuclear-reaction/cracks-in-belgian-nuclear-reactors/blog/52139/>
 2. Greenpeace 17th Feb 2015
<http://www.greenpeace.org/international/en/press/releases/Thousands-more-cracks-found-in-Belgian-nuclear-reactors-Belgian-regulatory-head-warns-of-global-implications/>
 3. Ecologist 18th Feb 2015
http://www.theecologist.org/News/news_round_up/2758982/belgian_nuclear_reactors_riddled_with_16000_unexplained_cracks.html
 4. East Anglian Daily Times 9th March 2015
http://www.eadt.co.uk/news/cracks_in_reactor_equipment_generate_fresh_concerns_over_sizewell_b_1_3983360



7. Radwaste Update

John Clarke, Chief Executive of the NDA told the Public Accounts Committee that it would be two years before communities would be invited to volunteer to be considered for a nuclear waste 'disposal' site, with some form of financial benefit expected to be offered. (1) The July 2014 White Paper, 'Implementing Geological Disposal' (2) said after two years of work, formal discussions between interested communities and the developer will begin (in 2016). So it looks as though the timetable has already slipped by about nine months.

To identify potential sites where a GDF could be located, the UK Government says it favours a voluntarist approach based on working with communities that are willing to participate in the siting process. The Government says it intends to develop the detail of a process for working with communities, working openly with experts in the field of community decision making. The final decision to site a Geological Disposal Facility (GDF) in a community will not be taken until there has been a test of public opinion that demonstrates community support for development at a specific site.

But the experience of West Cumbria is obviously making people nervous about how deep this commitment to a voluntary approach really is. In the previous process, out of 88 local and parish councils in Copeland and Allerdale, 53 expressed a view on moving on to the site selection phase of the process with only 8 in favour and the rest against. (3) The West Cumbria Managing Radioactive Waste Safely Partnership carried out an opinion poll which found that a small majority of those asked were in favour of moving on to the next stage. But the poll also acknowledged that 19% of those asked had never heard of the proposals; and 61% had either just heard of it or knew "just a little" about it.

So under the system now being proposed the concern is that a steering committee made up of the "representative Authority", RWM Ltd and the Government could decide to go-ahead with very limited support from an ill-informed population.

The Government says that once a site has been identified, using this "voluntarist approach" it will still require Planning consent to assess the site for a GDF. The Government insists that declaring a GDF a Nationally Significant Infrastructure Project under the Planning Act (2008) is the way forward. This system basically relegates local authorities to a consultative role and severely limits what can be discussed at a public inquiry.

Cumbria Trust said by adding GDFs (Geological Disposal Facilities) to the list of NSIPs (Nationally Significant Infrastructure Projects), the Government will be able to force through plans to return to Cumbria in the search for a site for a GDF and deny communities the voice usually afforded to them via public enquiries. (4) The NSIP order will give Government the power to impose a GDF upon a region even if it has not been established that it contains the requisite geology for the construction of a safe disposal facility.

No surprise then that there was opposition in the House of Lords to the legal order classifying the nuclear dump proposal as a "*nationally significant infrastructure project.*" Energy Minister, Baroness Verma insisted the Government still favoured a process for finding a site that was based on the local community's "*willingness to participate.*" She said: "*The final decision will not be taken until, and unless, there is a positive test of public support for hosting a GDF (geological*



disposal facility) *at the site in question.*” But the discussion drew forthright criticism from two Cumbrian lords including Lord Roger Liddle, a former special advisor to Tony Blair when he was Prime Minister, and a Labour county councillor representing Wigton. He said had he been a councillor at the time he would have supported continuing the investigation of west Cumbria as a possible site for the dump. But he said: *“As a democrat and a Cumbria citizen, I cannot support the new current proposal that the final decision be taken out of Cumbria’s hands and left to the Secretary of State. In reality, there is no willingness to engage seriously with the whole local community. Instead, there is only a determination that in the last resort, the Secretary of State will be able to do whatever he decides. This is a travesty.”* (5)

In a letter to Labour’s Energy Spokesperson and former FoE Campaigner, Baroness Worthington, David Lowry asked her to consider at least reading onto the House of Lords Parliamentary Record the green NGO opposition to this draft instrument, so future generations can see from the Parliamentary Record that those voluntary groups tried to oppose – but were totally ignored – this highly misguided proposal, which will result in the virtual elimination of any future examination of this plan for long term subterranean nuclear waste management, both in Parliament, and in any local planning inquiry. (6)

The Draft Infrastructure Planning Order moved to the House of Commons for approval on 18th March. (7) A handful of MPs managed to delay its approval, so the Order will now be debated on 25th March. (8)

CoRWM Triennial Review

Meanwhile Cumbria Trust (CT) and the Nuclear Free Local Authorities have both responded to a consultation on the Triennial review of the Committee on Radioactive Waste Management (CoRWM)

CT said under normal circumstances the scrutiny and advisory functions that CoRWM is tasked to provide should help in the management of higher activity radioactive waste. But in reality its effectiveness is dependent on the calibre of the members involved and the Government’s willingness to take heed of their advice or recommendations. Sadly history shows that significant recommendations made in the past have been downplayed or simply ignored. CT says it has serious concerns about the blind faith of CoRWM members in *“engineered solutions”* and *“safety cases”*. (9)

The NFLA said the fact that there are uncertainties and a need for continued research on geological disposal was acknowledged by the first CoRWM report in 2006. However, those who support the nuclear industry appear to believe that any uncertainties associated with the science of deep disposal can be reduced sufficiently by carrying out further research. To the NFLA, this is poor scientific method. It cannot be assumed that further research will produce the desired outcome. For instance the UK Nuclear Decommissioning Authority says *“further research will be carried out during a geological disposal facility development process in order to reduce uncertainties”*. The Environment Agency points out that:

“[f]urther research has the potential to increase uncertainties, e.g. by revealing unforeseen complexities or additional processes influencing the system under study. While a well defined and executed research programme can answer fundamental questions, uncertainty is a normal characteristic of science, and as such, additional questions (and uncertainties) are often raised.”



Scientific research should be carried out with an open mind, not with the aim of proving that an initial view is correct. Strong initial impressions can structure the way that research results are interpreted. This is known as “confirmation bias”. In the NFLA’s view, there must be no suspicion that research findings are deemed acceptable regardless of what the research actually identifies, or that new evidence is simply made to fit. In the NFLA’s view, it is essential that CoRWM’s remit is strengthened to make absolutely clear that its role of scrutinising “*proposals, plans and programmes to deliver geological disposal*” is NOT to assist in the implementation of the Government’s programme but is to guard against any unscientific practices and confirmation bias in the research programme. CoRWM’s remit should acknowledge that it is possible that further research may indicate that a robust safety case for deep geological disposal cannot be made. (10)

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1. Whitehaven News 12th March 2015 <http://www.whitehavennews.co.uk/mps-slam-sellafield-clean-up-costs-1.1198509>
 2. Implementing Geological Disposal, DECC, July 2014
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/332890/GDF_White_Paper_FINAL.pdf
 3. NFLA Dec 2013
http://www.nuclearpolicy.info/docs/radwaste/Rad_Waste_Brfg_45_MRWS_GDF_Siting_Final_Response.pdf
 4. Cumbria Trust 23rd Feb 2015 <https://cumbriatrust.wordpress.com/2015/02/23/in-case-you-are-unaware-the-seemingly-inexorable-plan-to-diminish-our-democracy-forges-ahead/>
 5. News and Star 27th Feb 2015 <http://www.newsandstar.co.uk/news/1.1195423>
 6. Radiation Free Lakeland 24th Feb 2015
<https://mariannewildart.wordpress.com/2015/02/24/letter-to-baroness-young-of-scone-from-dr-david-lowry-reconsider-the-plan-for-nuclear-waste/>
 7. <http://www.publications.parliament.uk/pa/cm201415/cmagenda/ob150318.htm>
 8. Radiation Free Lakeland 19th March 2015 <https://mariannewildart.wordpress.com/2015/03/19/success-your-lobbying-helped-force-a-vote-in-parliament-on-nuclear-waste-dumping-we-have-till-wednesday/>
 9. Cumbria Trust 13th March 2015 <https://cumbriatrust.files.wordpress.com/2015/03/corwm-letter-13-3-2015.pdf>
 10. NFLA 2nd March 2015
http://www.nuclearpolicy.info/docs/news/NFLA_CORWM_Review_submission.pdf



8. Decentralised Energy

In Naomi Klein's new book on Climate Change called "*This Changes Everything*" (1) she says:

"I have begun to understand how climate change ... could become a galvanising force for humanity, leaving us all not just safer from extreme weather, but with societies that are safer and fairer in all kinds of other ways as well. The resources required to rapidly move away from fossil fuels and prepare for the coming heavy weather could pull huge swaths of humanity out of poverty, providing services now sorely lacking, from clean water to electricity, and on a model that is more democratic and less centralized than the models of the past. This is a vision of the future that goes beyond just surviving or enduring climate change, beyond "mitigating" and "adapting" to put it in the grim language of the United Nations. It is a vision in which we collectively use the crisis to leap somewhere that seems, frankly, better than where we are right now." (2)

[NB. In her Guardian lecture on 6th October 2014 Klein says she understands how George Monbiot came to the desperate conclusion that we need nuclear power, and in the absence of a social movement that can achieve a just transition that might be true. But nuclear is just another highly centralised corporatist industry that consolidates wealth and power. Similarly with geo-engineering, it is seen as easier to turn down the sun than to put up solar panels. Both are part of an "extractivist" mindset which requires that someone else eats the risk. There is really good research out there which shows that we can switch to 100% renewables. (See <http://www.theguardian.com/membership/2014/oct/06/guardian-live-stream-naomi-klein> from 1:24:24)]

In a similar vein, former Labour MP, Alan Simpson has written a chapter for a book just published called "*What the Three Main Parties are not Telling You: A Radical Way out of Stagnation and Inequality*". (3) In it he says the next Labour Government will inherit an obsession with fossil fuels and nuclear power. The Coalition's energy and climate policies are a feast of all that is incompetent or regressive, or both. Labour is being presented with a set of open goals that even the England team would struggle to miss. Yet this is precisely what the Party could do.

Tomorrow's energy systems will not be designed around old style power stations. They may not revolve around power stations at all. Big Energy knows this, and is terrified. Within a decade, half of today's energy corporations will have gone bust. Without huge public subsidies, financial markets will no longer underwrite them. Without unsustainable dividends, investors won't put their money into them. Energy systems will become both more decentralised and more interconnected. The energy we don't use (and the energy we store) will become at least as important as the energy we consume. Energy security will be found, and financed, in a myriad of different ways. Only a bunch of idiots would saddle Britain with an energy investment programme obsessed with the past rather than the future; and at a cost that will sink the country rather than save it. Yet this is precisely what the Coalition government will have done.

In terms of energy policy, this is not about old style re-nationalisation of the Grid or of energy companies. It is more about a policy framework that will socialise the production and distribution of energy (in a sustainable context) at the same time as delivering markets that consume less. This is also an invitation to grasp what the shift from an energy oligarchy to an



energy democracy might look like; defining a new '*politics beyond the power station*'; and setting new ground rules for energy markets that sell local (and even non-)consumption.

An incoming Labour government, committed to the Coalition policies it inherited, would be on a suicide mission; policies that are as unaffordable as they are unworkable. The immediate crises in the middle of this decade will require a more radical re-focussing of priorities and resources. A fifth of UK electricity generating power will be about to go off-line. The fear of a Capacity Crunch will be used by the press (and Old Energy) to panic Labour into pledging huge subsidies to the past. Where market support is needed, Labour must pledge that public subsidies will go to a sustainable future, not an unsustainable past.

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1. See <http://thischangeseverything.org/>
 2. Guardian 6th March 2015 <http://www.theguardian.com/environment/2015/mar/06/dont-look-away-now-the-climate-crisis-needs-you>
 3. See <http://www.michaelmeacher.info/weblog/2015/03/what-the-3-main-parties-arent-telling-you-a-radical-way-out-of-austerity/>



9. Scotland – energy futures debate

In recent weeks fresh doubts have been raised about the future of the Longannet coal power station in Fife, which provides a quarter of Scotland's electricity output, and is a major buyer of coal from Scottish opencast producers. With both Hunterston and Torness nuclear plants due to close in 2023, it will mean that new sources will be needed for about 60% of Scotland's electricity supply. Tory energy spokesman Murdo Fraser warns there is no strategy from the Scottish Government which has "shut the door" on fracking and nuclear power. "We need at least one new gas-powered generating station for Scotland," he said. "And if we are not going to replace Torness and Hunterston with new nuclear capacity, we'll probably need more than that." (1)

But WWF Scotland director Lang Banks said Scotland doesn't need new electricity from coal, gas or nuclear to ensure security of supply. (2) Writing in *The Herald*, Lang Banks said the centralised, large, fossil-fuel generation model is being unravelled with every new megawatt of renewable generation. The role of "baseload" thermal power is being eroded rapidly as renewable technologies are effectively taking the place of conventional fossil fuel power plants. Already in Germany we are seeing periods when fossil fuel power is scarcely required. The impact is most clearly seen in the decision by German utility E.ON to radically restructure its business model to cut off its nuclear, oil, coal and gas operations and focus on renewables. In Scotland, the debate on the energy transition is taking place in microcosm as policymakers and industry grapple with the future of Longannet coal-fired power plant. (3)

Nevertheless the election of a Labour government in Scotland could see a new generation of nuclear power stations constructed according to the party's energy spokesman Tom Greatrex. He said he believed nuclear power must remain part of the UK's energy mix and Scotland will have to either accept new stations or import nuclear-generated electricity from England. The SNP Scottish government is opposed to any new nuclear stations in Scotland and has made it clear it would use planning laws to block any proposals, but Mr Greatrex told BBC Scotland's Sunday Politics programme: "I think new nuclear is going to be part of the UK mix. We are either going to have to import it to Scotland through the interconnection from England or we are going to have to build some more in Scotland. I suspect it will end up being the former." But he added: "I wouldn't be against new nuclear being part of the mix in Scotland and it needs to be part of the mix across the UK." (4)

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1. Scotsman 25th Feb 2015 <http://www.scotsman.com/news/environment/scots-need-new-power-station-or-lights-go-out-1-3700678>
 2. WWF Scotland report Pathways to Power: Scotland's route to clean, renewable, secure electricity by 2030. <http://assets.wwf.org.uk/downloads/pathwaystopower.pdf>
 3. Herald 11th March 2015 <http://www.heraldsotland.com/comment/columnists/the-way-the-wind-is-blowing-it-is-time-to-ride-the-wave-of-the-renewables-revolut.120316094>
 4. Times 2nd March 2015 <http://www.thetimes.co.uk/tto/news/uk/scotland/article4369541.ece>



10. Most renewables cheaper than nuclear

Offshore wind has huge potential for delivering long-term energy with low carbon emissions, supply security and large economic benefits, but one thing is clear: for the industry to thrive longer term, the cost of building turbines at sea must be cut sharply.

The UK's first competitive auction for a "contract for difference" (CfD) – a subsidy bridging the gap between market power prices and the cost of making a windfarm economically worth building – has just delivered a far larger cut in the cost of offshore wind than most people thought possible. For example, the successful bid by Iberdrola's UK business, ScottishPower, means power from its East Anglia One project in the North Sea will be delivered at £119 per megawatt hour from 2018 – cheaper than any other large-scale offshore project in the EU. But the industry believes there are more price cuts to come. The sector is on track to achieve the Government's aspiration of getting offshore wind levelised costs – that's the cost of power over the plant's lifetime, including construction costs – below £100/MWh by 2020. (1)

The Danes, as usual the trailblazers in wind power, have just announced a contract for what will be the world's cheapest offshore wind park, at just £75 a MWh, for just a 12 years premium price contract. Compare this with the Hinkley C deal of £92.50 for a staggering 35 years and £10 billion of loan guarantees that offshore wind does not usually receive. (2)

One thing is absolutely certain - the prices awarded in the CfD auction make it even more clear than it was already that renewable energy is generally a much cheaper option compared to nuclear power. Onshore wind projects were given contracts for premium prices at around £81 per MWh, whilst offshore wind came in at just under £120 per MWh, prices varying according to the year in which they are set to be deployed (between 2016 and 2019). Immediate comparisons are being made with the Hinkley C contract which was 'settled' at £92.50 per MWh in October 2013, although such comparisons grossly flatter the nuclear deal. This is because the renewable energy contracts last for a mere 15 years compared to the 35 years awarded to Hinkley C and the Hinkley C project has very valuable loan guarantees which the renewable energy projects do not possess. The Hinkley C deal is valued in 2013 prices which are already out of date. (3)

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1. Telegraph 2nd March 2015 <http://www.telegraph.co.uk/finance/newsbysector/energy/11445864/Tilting-towards-wind-farms-an-energetic-view-of-the-future.html>
 2. Reuters 27th Feb 2015 <http://www.reuters.com/article/2015/02/27/us-vattenfall-windfarm-denmark-idUSKBN0LV1F520150227>
 3. Dave Toke's Blog 27th Feb 2015 <http://realfeed-intariffs.blogspot.co.uk/2015/02/scotland-gets-half-of-renewable-auction.html>