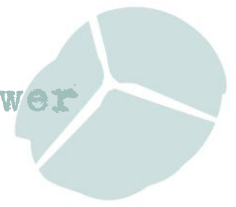




No.59 February 2014

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1. Sellafield - poor progress, missed targets, escalating costs, slipping deadlines and weak leadership

Nuclear Management Partners – the consortium overseeing the clean-up of Sellafield – should have their contract terminated if performance does not improve, says Margaret Hodge, Chair of the House of Commons Public Accounts Committee (PAC). The bill for cleaning up Sellafield has risen to more than £70bn, according to a report from the public accounts committee. A new report (1) from the Committee says progress has been poor, with missed targets, escalating costs, slipping deadlines and weak leadership. The MPs made a series of recommendations focusing on the role of Nuclear Management Partners (NMP). The report concluded that the consortium was to blame for many of the escalating costs and the MPs said they could not understand why the NDA extended the consortium's contract last October. (2)

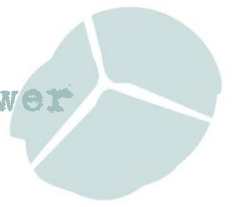
Damning criticism of the consortium was also revealed in a series of hostile letters written by John Clarke, head of the NDA. Mr Clarke accused Nuclear Management Partners (NMP) of undermining confidence and damaging the entire project's reputation, as well as criticising Tom Zarges, the consortium chairman, of setting “*unduly conservative*” targets. In one letter, written in November 2012, Mr Clarke attached slides that outlined the NDA's frustrations with NMP's decontamination work at the Cumbrian facility, including concerns about the “quality of leadership” and the “pace of change”, which it said “feels too slow”.

The harsh tenor of the letters – one of which demanded “*improved performance in a number of key areas, including schedule delivery*” – adds weight to suggestions that Mr Clarke did not want NMP to continue at Sellafield. The NDA looked at bringing the decontamination back under the management of the public sector.

A critical 292-page report by the accountancy firm KPMG last year showed that nine of the 11 biggest projects on the site, including the construction of a storage facility for radioactive sludge, were a combined £2bn over-budget. (3) Seven were also behind schedule, while KPMG argued that the structure of NMP's contract was “inappropriate” and was designed in a way that sought to “maximise shareholder returns”. NMP is a consortium of California-based URS, France's Areva and British engineer Amec. Dr David Lowry, an independent environmental policy and research consultant and a member of Nuclear Waste Advisory Associates, obtained the letters. He said: “*This is a massive indictment of NMP's failure to deliver – and then to give them an extension is almost inexplicable.*” (4)

See: Towards a Safer Cumbria: How government, regulators and the Nuclear Decommissioning Authority have neglected nuclear waste in Cumbria, Friends of the Earth, March 2013

http://www.no2nuclearpower.org.uk/wp/wp-content/uploads/2013/03/Towards_a_Safer_CumbriaMarch2013.pdf



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2. Plutonium – no clear strategy

The Nuclear Decommissioning Authority (NDA) has announced that it has identified three "credible" approaches for reusing separated plutonium. The NDA last year undertook a review of the government's "preferred option" of reusing plutonium as MOX fuel, and also looked at the credibility of alternative proposals put forward by GE-Hitachi and Candu. The NDA has now published a position paper on its review, indicating that a possible U-turn could be on the cards as each of the three proposals represents a "credible reuse option" for the UK's plutonium stockpile.

"This work has resulted in NDA concluding that reuse remains the preferred option and, based on the information provided and against our definitions, there are three credible reuse options: - reuse as MOX in light water reactors, reuse in CANDU EC6 reactors and reuse in PRISM fast reactors," the NDA stated. *"We note all the technologies being considered have pros and cons and that no "perfect" solution exists. It may be that a multi-track approach offers best value for money."* (1)

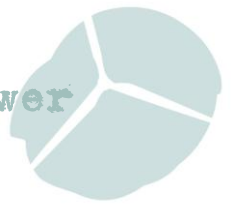
The organisation added that it now intended to undertake one to two years of technical studies to "establish a consistent level of understanding of risks and uncertainties for each option". (2)

So GE Hitachi's PRISM nuclear reactor is considered to be a "credible option" for managing the UK's plutonium stockpile. PRISM is a high energy, sodium-cooled fast reactor. (3) This is the latest in a series of fast-reactor designs. *"There will be those who worry about the safety implications of building a new kind of nuclear power station and feeding it with something as dangerous as plutonium"*, says Peter Franklin on the Conservative Home website. *"But, don't worry, it's all in Japanese hands and those guys really know what they're doing! In any case, after so many attempts by so many countries to make the fast reactor concept work, someone is bound to get it right sooner or later"*. (4)

The House of Commons Public Accounts Committee (PAC) report (see above) said the NDA "has not set out clearly its strategy for dealing with the plutonium stored at Sellafield." DECC admitted to the Committee that *"the value of the [MOX] fuel produced in a new project would be lower than the cost of building, maintaining and operating a new plant."* And it also pointed out that *"there are currently no nuclear power stations in the UK which could use the fuel."*

DECC told NGOs in February that it will include further assessment of immobilization options for the 111 tonnes of plutonium currently stockpiled at Sellafield, alongside re-use options set out in the NDA report. (5)

Meanwhile, a confidential study by the US Energy Department has concluded that completing the controversial MoX fuel plant in South Carolina may cost billions of dollars more than the department has previously promised. It is likely to cost a total of \$25 billion to \$30 billion on top of the \$4 billion spent on its construction so far. That amount is so high that the Obama administration is leaning towards embracing what one described as "some other option" for dealing with the 34 tons of weapons plutonium that the MOX at Savannah River was supposed to help eliminate. (6)



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 2. NDA 20th Jan 2014 <http://www.nda.gov.uk/news/pu-management-approach.cfm>
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3. European Commission State Aid Investigation

The European Competition Commission has launched a full investigation into whether Britain is providing up to £17bn of potentially illegal public guarantees to the proposed Hinkley Point C nuclear power station in December 2013. The Commission is examining the contract between the UK government and EDF to see whether the 'contract for difference' constitutes illegal state aid. The UK argues that, if this is considered state aid, it should be permitted because the project would not be funded without it and the project is necessary to meet the government's decarbonisation and energy security goals. A public consultation will begin soon, probably for one month, as soon as it is announced in the Europe Union's Official Journal. (1)

The Competition Commission will weigh up whether the benefits of the State Aid proposed for Hinkley Point C outweigh the disbenefits of the market distortion in the internal energy market that everybody agrees is already significantly distorted. Mark Johnston Advisor at the European Centre for Policy Studies (EPC), says the principles behind the case, if the Commission were to allow them, would effectively put the Single Market into reverse, and as those principles were exploited by other governments it would, in effect, be the beginning of the end of the Single Market. Other countries such as Hungary, Czech Republic and Poland have expressed interest in the UK model. (2)

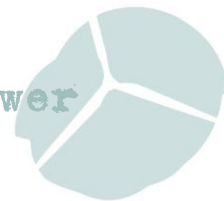
The commission allows governments to subsidise industries if they help the EU meet its broader economic and environmental goals. The commission will exempt projects from the state aid rules if:

- They help the EU hit its emission reduction target
- They increase the security of the EU's energy supply
- They wouldn't get built without a leg up from the government

The UK sent a letter to the commission asking it to exempt the Hinkley Point deal on each of those grounds. Their pleas seem to have fallen on deaf ears. The commission says it disagreed with many of the UK's arguments.

The commission disagrees with the UK's claim that the new nuclear plant is needed to help the EU hit its emissions reduction target, because the UK could reduce emissions to the same extent, and at the same rate, in other ways and alternative energy technologies which could help the UK reduce emissions - such as wind and solar - could be unfairly crowded out.

The commission also objects to the claim that the Hinkley Point plant is needed to secure the EU's energy supply. The commission says the UK government's logic is flawed, because Hinkley won't come online until 2023, so it can't be essential to security of supply as the UK government must be making other, more immediate, plans. The Commission also argues that the UK underestimates the extent to which continental interconnection - electrical wires and gas pipelines connecting the UK to Europe - will increase security of supply.



Finally, the commission says the Hinkley Point deal could be giving an unfair commercial advantage to the nuclear industry. The commission currently permits renewable energy subsidies as they help the EU hit its climate and renewable energy goals. It argues that without the subsidies, investors would be put off the renewable energy industry as it relies on newer - and therefore more expensive - technology, than its fossil fuelled competitors. The commission says the same argument can't be applied to nuclear energy, however, because:

- Nuclear technology is now mature enough to stand on its own two feet.
- The new nuclear plant may have been built without government support, as existing policies - such as the UK's carbon tax - make investing in nuclear power attractive.
- There are other examples across the EU where new nuclear projects were built without state aid - such as in France and Finland - and it's unclear why the UK context should be any different. (3)

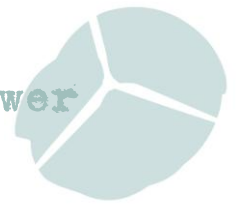
Greenpeace UK chief scientist Dr Doug Parr said: *"The EU executive has blown a hole in [this] nuclear stitch-up by showing it's a rubbish deal for consumers, will damage the prospects for clean energy technology, and will leave the UK taxpayers to shoulder the burden of risk. By questioning whether the huge subsidies promised to EDF are justified, the commission is casting a shadow over the whole project."* (4)

The EC's fiercely sceptical initial take on the Hinkley deal suggests that the deal may not be proportionate and risks substantially over-compensating EDF. Indeed the commission suggests additional support to EDF (on top of market prices) could wind up between £5bn and £17.6bn (in NPV terms, a variation of £13bn). The measure, moreover, could hardly be argued to contribute to affordability - at least at current prices, when it will instead and most likely contribute to an increase in retail prices. (5) Alan Whitehead MP says the EC systematically dismantles the arguments put forward by the UK government on the Hinkley, and then asks for comments within one month on the pile of rubble that remains. (6)

The EC says the UK's support for EDF's plan to build Hinkley Point C may distort the market. *"The Commission has doubts on the structure of the Contract for Difference (CfD) for nuclear which, by its design, duration and scope, has the potential for distorting competitive conditions,"* it said. *"The Commission doubts whether the combination of aid measures, and in particular of a CfD with inflation indexation and a credit guarantee, is proportional to the potential benefits."* (7)

The Times called the EC Competition Commissioner's letter to the UK Government *"a withering initial assessment"* and said plans to build Hinkley are now in disarray. The Commission said consumers would end up paying up to £17.6 billion of "super-normal" subsidies via their energy bills to EDF Energy, yet the subsidies are entirely unnecessary, since nuclear power will become economic by the end of the next decade, according to the UK Government's own forecasts. (8)

Renewable technologies will be unfairly constrained by the size of the Levy Control Framework - a Treasury device which limits funds available for energy subsidies. The bulk of the funds available will probably be used up by Hinkley Point C after 2023, despite the fact that solar and offshore wind are likely to be cheaper by then.



Britain's solar industry says it has the capability to deliver the same amount of electricity every year as is expected to be produced Hinkley Point C within 24 months and at a comparable cost. Solar power could provide a lot more electricity by 2020 than is currently planned under the Levy Control Framework. Medium sized solar projects (50kW to 5MW), are likely to reach parity with grid electricity prices first in many countries, and therefore no longer require subsidies. Yet it is this size of project which is being particularly unfairly treated in the UK. In terms of efficiently allocating the available public subsidy to projects which can meet climate change and energy security objectives and reduce costs this is insane. (9)

There has been a dramatic reduction in the Government's ambition for offshore wind from 32GW in 2020, down to 10GW or less in 2020. This will be reflected in the Levy Control Framework. The Government's ambition for offshore wind after 2020 seems to be very limited indeed - perhaps as low as 2GW up to 2030. Despite the fact that several companies believe offshore wind could be cheaper than nuclear by 2020 or not long after, the Government appears to be planning to allocate the bulk of funds available for energy subsidy to new reactors after 2023. (10)

According to Martin McAdam, CEO of wave power company Aquamarine Power, there is more than 1GW of onshore wind on Scottish islands which could be built by 2020 if only the UK Government had a mind to solve the challenge of transmission links. (11)

Revived plans to lay a 1.2GW cable to import renewable electricity from Iceland also look as though they will be able to provide electricity which is cheaper than Hinkley Point. (12)

Back-end Costs

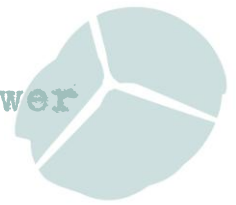
In addition to the Contract for Difference, the UK's back-end nuclear waste management plans for new-build reactors have yet to be notified to the European Commission for State Aid clearance. The UK government is preparing another notification to the EC of how it intends to share the costs for managing and disposing of nuclear waste from Hinkley Point C and other new nuclear power plants. (13)

It could take until the end of this year for the EC to decide whether to approve the construction of Hinkley Point C. (14)

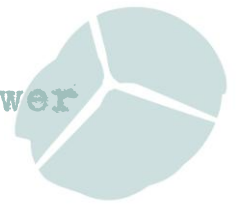
The letter the EU Commissioner Almunia sent to UK on opening the state aid procedure. An official public consultation could start any time, most likely around mid February. European Commission 31st Jan 2014

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4. European Targets

The European Commission has outlined its plans for climate and energy policy until 2030. The Commissioners want a binding target to reduce carbon emissions by 40% from 1990 levels. Renewables will need to provide 27% of EU energy by 2030, but while the target will be binding at EU level there will be no mandatory targets for member states. The policy proposals are subject to review by heads of government. Green groups have said the new targets lack ambition and the 40% emissions cut is "dangerously low". (1) The announcement did not set a new energy efficiency goal. The role of energy efficiency policies will be clarified when the commission publishes an Energy Efficiency Directive later this year.

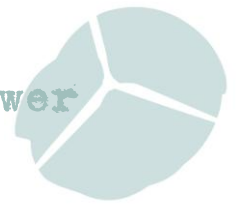
The 40 per cent goal is the "least ambitious" target the commission could have proposed if it remains committed to limiting warming, environmental consultancy Ecofys argues. It says the latest research suggests the EU should instead be aiming for a 50 per cent reduction. Professor Kevin Anderson from the Tyndall Centre on Climate Research goes further. He argues that if the climate is a bit more sensitive to greenhouse gases, or emissions peak later than scientists thought they would back in 2007, the EU's new target should be closer to an 80 per cent reduction.

The 27% renewables target is also not very ambitious either. The commission's own analysis suggests renewable energy would provide about 24% of the EU's energy in 2030 even if there were no targets. And it is not clear how the EU will implement a target across the whole union without country specific targets. (2) Apparently the plan to reach 27% is to invite each country to table their own renewable energy target and see if it adds up to 27%. If it doesn't, countries will be called upon to submit a new offer, with the process continuing until the target has been divvied out and catered for. But a senior EU official admitted yesterday that the "binding" target was unenforceable in its current form because the block has no power to force any country to pledge a certain level of renewable energy. Furthermore, it is not able to punish any country for failing to meet whatever pledge it does make. (3)

The Renewable Energy Association is *"disappointed by the lack of ambition for renewable energy in the European Commission's proposed 2030 energy and climate change framework."* It believes that the existing 2020 targets have been key to the recent growth in renewables - and have been particularly valuable when negative rhetoric from Ministers has damaged market confidence in the UK.

REA Chief Executive Dr Nina Skorupska said: *"Experience shows that binding renewables targets do two things: First, they give a major long-term boost to investor confidence, helping accelerate market growth and technology cost reduction. Second, politics frequently trumps economics in the real world, and when politicians go wobbly on renewables, the targets help keep investment flowing. Our initial impression is that an EU-wide renewables target, without binding targets for specific Member States, will only give very limited impetus for expanding renewables in the UK."* (4)

"The previously far-sighted and ambitious European Commission is a shadow of its former self, hiding behind the UK and other backward-looking member states and lobbies," said the chief



executive of the European Wind Energy Association, Thomas Becker. (5) Austria's wind federation IG Windkraft says the EC package is homage to the nuclear industry, which lobbied hard for a single greenhouse gas target because this could also be reached with nuclear power. (6)

Ed Davey says no target is needed as the government's carbon budgets will require a massive growth in low-carbon energy. But this could come from nuclear power, carbon capture and storage, energy efficiency or an expansion of the use of gas including fracking. "*The market will decide,*" he said. (7)

The European Parliament has called for a 40% cut in CO2 emissions, a 30% target for renewable energy and a 40% target for energy efficiency by 2030. These targets should be binding. MEPs also criticised the European Commission's recent proposals as short-sighted and unambitious. (8) An alliance representing more than a thousand European cities has written to Herman Van Rompuy, the president of the European Council, calling for binding 2030 targets of 40% for energy efficiency, and 30% for renewable energy, in line with the European Parliament's proposal. (9)

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5. Horizon – GDA

In December 2013, the Office for Nuclear Regulation (ONR) and the Environment Agency (EA) completed the preparatory stage (Step 1) of the Generic Design Assessment (GDA) of the Advanced Boiling Water Reactor (ABWR), which Horizon is planning to build at Wylfa on Anglesey and Oldbury in Gloucestershire. In January 2014, ONR announced it was moving to Step 2 of the process - the start of formal assessment.

In the preparatory phase the regulators worked with Hitachi-GE to help ensure that they understand the UK regulatory system. The preparatory phase allowed the requesting party to set up project management and technical teams for the GDA, and to prepare their submissions for Step 2. At the end of Step 1, the regulators undertook a gateway review to formally consider the readiness of the project to move to Step 2. Due to the complexity and the level of scrutiny required in the GDA process it is expected to take around four years to complete, provided Hitachi-GE meet the timetable for submissions and the submissions are of suitable quality. Construction is expected to start around 2019 with the first reactor becoming operational in the first half of the 2020s.

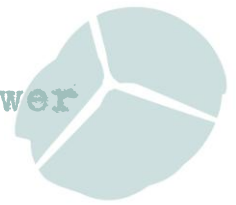
Hitachi-GE is encouraged to publish detailed design information on its website and update it as new information becomes available. This means that anyone can view detailed design information on the web and comment on it. (1)

As part of the second stage of the GDA, Hitachi has embarked on a public and stakeholder consultation on the reactor design. (2)

Critics say that the GDA system has already failed after it passed the EPR reactor design in spite of 724 unresolved concerns known as 'Assessment Findings'. This is set out on The Ecologist website in "*Hinkley C: the Generic Design Assessment has failed*". Nuclear expert John Large commented: "*The existence of such uncertainties together with the quite obvious incompleteness of the plant design and development, particularly in the generic safety critical areas of Fault Studies and Control & Instrumentation must have, surely, rendered the GDA process itself incomplete and inconclusive.*" (3)

As we reported in November 2012 (4) the four ABWRs built so far in Japan had very poor load factors until the Fukushima accident in 2011.

On 23rd January 2014, the US Department of Justice announced it accepted \$2.7 million dollars to settle a government lawsuit against GE Hitachi for false statements to both the U.S. Department of Energy and the Nuclear Regulatory Commission for their new design, the Economic Simplified Boiling Water Reactor (ESBWR). GE Hitachi says the allegations haven't been proven and that it settled to resolve the matter. The U.S. government accused GE Hitachi of, "*conceal[ing] known flaws in its steam dryer analysis and falsely represented that it had properly analyzed the steam dryer in accordance with applicable standards and had verified the accuracy of its modeling using reliable data.*"



GE has so far walked away from the Fukushima disaster – in spite of the fact the corporation had ignored warnings from its own engineers about the problems in their reactor design – without paying anything. Meanwhile, the tens of thousands of Fukushima nuclear evacuees are still struggling to obtain adequate compensation for destroyed lives, livelihoods, and communities that many will never be able to return home to. (5)

Just as we go to Press the Department of Energy and Climate Change has published a consultation on the Nuclear Industry Association application for a regulatory justification decision on the Advanced Boiling Water Reactor (ABWR). The consultation runs until 21st May 2014. (6)

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6. NuGen – an AP1000 in 4 years

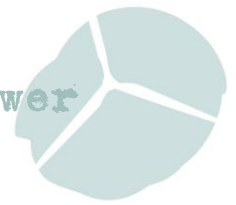
Toshiba-owned Westinghouse Electric Company has agreed to buy a 60% stake in NuGen for £102m. Toshiba will buy all of Iberdrola's 50% share and a further 10% from GDF Suez, (which incidentally is 35.9% owned by the French Government) giving Toshiba a 60% controlling stake. Westinghouse plans to build three AP1000 reactors with a combined capacity of 3.4GW at the Moorside site next to Sellafield in partnership with GDF Suez. The first of the reactors is expected to be online in 2024. (1) Toshiba-owned Westinghouse will supply the reactors, while GDF will run the site. Westinghouse will manufacture the fuel for the new AP1000 reactors at Springfields, a UK-licensed fuel manufacturing facility near Preston. (2)

The Office for Nuclear Regulation (ONR) and the Environment Agency (EA) completed their planned assessment of the AP1000 reactor design in 2011 and issued interim Design Acceptance Confirmation (iDAC) and an interim Statement of Design Acceptability (iSODA). Westinghouse's iDAC contained 51 so-called "GDA Issues", which will need to be resolved before a full Design Acceptance Confirmation is issued. (3) According to i-Nuclear (See News 17th December 2011), some of the GDA Issues are expected to be easily answered or resolved, while others could require improvements to the safety case or even design changes. Westinghouse overcame major UK concerns about the modular construction of the AP1000 shield building during the GDA review. The shield building is a protective structure covering the reactor building and inner steel containment. The proposed modular construction would use a steel-concrete-steel sandwich design. However, progress on clearing ONR concerns about Westinghouse's proposed use of squib valves was more limited. The company expects to obtain Generic Design Assessment (GDA) approval in mid-2016. (4)

Toshiba is promising to build its first AP1000 in the UK in half the time planned to complete the first EPR reactor at Hinkley Point. Toshiba claims it would take only four years to build the first of three reactors. This would only be a year after the first EPR despite the fact that construction at Hinkley is due to start in 2015. Simon Marshall, the programme director for Westinghouse in the UK, also said that the consortium would demand a lower price than the EPR - the AP1000 reactor type would be cheaper because it had a modular design that had been used before. In contrast, EDF Energy's design was one of the first of a new generation, pushing up costs. (5)

Reader in Energy Politics at Aberdeen University, Dave Toke, says evidence from the USA casts a lot of doubt on hopes the AP1000 design will be cheaper than Hinkley C. Toshiba will need to find investors, which may be hard to find, even though, no doubt they will (like Hinkley C but unlike renewable energy schemes) be offered a very valuable amount of loan guarantees from the UK Treasury. (6)

Meanwhile, a joint lawsuit filed in Tokyo by 1,415 plaintiffs, including 38 Fukushima residents and 357 people from outside Japan, say the manufacturers of Fukushima reactors - Toshiba, GE and Hitachi - failed to make needed safety improvements to the four decade-old reactors. They are seeking compensation of 100 yen (\$1) each, saying their main goal is to raise awareness of the problem. General Electric, Toshiba and Hitachi have walked away without paying a cent towards the compensation for the many thousands of victims or the enormous cost of decontaminating the radioactivity spewed from their reactors. (7)



If Toshiba can indeed build a reactor in four years it will seem very odd if Sizewell C is being built at the same time. Construction at Sizewell is unlikely to start before 2018 - at least two years later than expected, but electricity isn't expected to be generated until 2028. (8)

- For an alternative energy strategy for Cumbria based on renewables and energy efficiency see Towards a Sustainable Cumbria, West Cumbria and North Lakes FoE, June 2013: http://www.no2nuclearpower.org.uk/wp/wp-content/uploads/2013/06/Towards_Sustainable_Cumbria_210613.pdf

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1. Construction Index 15th Jan 2014 <http://www.theconstructionindex.co.uk/news/view/japanese-buy-into-nugen-nuclear-scheme>
 2. Telegraph 14th Jan 2014 <http://www.telegraph.co.uk/finance/newsbysector/energy/10572454/UK-nuclear-project-NuGen-to-be-up-and-running-in-2024.html>
 3. See NuClear News No.36 <http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo36.pdf>
 4. Reuters 14th Jan 2014 <http://uk.reuters.com/article/2014/01/14/uk-toshiba-nuclear-britain-idUKBREA0D13E20140114?rpc=401&feedType=RSS&feedName=businessNews&rpc=401>
 5. Times 15th Jan 2014 <http://www.thetimes.co.uk/tto/business/industries/utilities/article3975584.ece>
 6. Dave Toke's Blog 15th Jan 2014 <http://realfeed-intariffs.blogspot.co.uk/2014/01/is-toshibas-nuclear-project-really.html>
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 8. East Anglian Daily Times 3rd Feb 2014 http://www.eadt.co.uk/news/sizewell_c_construction_of_any_new_nuclear_plant_unlikely_before_2018_at_least_two_years_later_than_expected_1_3278275



7. Day of the Jellyfish

For the second time in 2013 Torness nuclear power station near Edinburgh was forced to shut down a reactor in November because its seawater cooling system became clogged with seaweed.

In 2011 it was closed by a swarm of jellyfish, and EDF Energy was criticised by ONR over a seaweed blockage that closed down a Torness reactor in 2010. Inspectors identified "*a number of areas where further enhancement may be possible*" in the safety arrangements for dealing with seaweed. (1)

In September 2013 a swarm of moon jellyfish (*Aurelia aurita*), a species that is not even dangerous to swimmers, clogged a cooling water intake at the Oskarshamn nuclear power plant in Sweden and forced operator E.ON Kärnkraft Sverige to shut down a reactor. Oskarshamn had experienced the problem previously, in 2005, and in 2006 the Hamaoka plant in Japan had to cut its power output while dealing with a jellyfish blockage. Florida Power & Light's St. Lucie plant on Hutchinson Island in the US was attacked the same year as Torness.

It is not just jellyfish and seaweed that can paralyse a power plant. In 2012, Pacific Gas & Electric's Diablo Canyon facility, the only nuclear plant in California, had to power down after cooling water intakes filled with millions of sea salps – an organism that looks like a jellyfish, but is more complex.

The problem with jellyfish is that they are increasing in the majority of the world's coastal ecosystems, according to a global study of the creatures carried out at the University of British Columbia (UBC). So jellyfish swarms are likely to become more common in future. Nuclear plant operators probably need to start thinking about how to tackle the problem. So far none of the incidents recorded appears to have posed a threat to human safety. The standard response to clogged water pipes is to shut down the reactor while organic matter is cleared away, but what happens if, for some reason, the plant can't be shut down? In any case closure while jellyfish are cleared away is a process that can take several days, and starts to become quite expensive for the operator.

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1. Guardian 21st Nov 2013 <http://www.theguardian.com/environment/2013/nov/21/seaweed-torness-nuclear-reactor-east-lothian>
 2. Nuclear Insider 22nd Jan 2014 <http://analysis.nuclearenergyinsider.com/supply-chain/jellyfish-impact-nuclear-plant-operations>



8. NDA's intermediate-level waste plans

The NDA wants to take waste from Dungeness by train to Southminster and then load it onto lorries to be delivered to Bradwell between this year and 2018. This could involve up to 100 lorry movements shifting up to 98.5 cubic metres of waste. The NDA said that should the plans go-ahead the amount of waste would be “fairly insignificant” – amounting to 17 train loads over four years. (1) Maldon District Council remains opposed to the imports but wants compensation if it goes ahead. (2) Dungeness would also send waste to Sizewell.

The proposals were contained in a Preferred Options paper by the NDA called “*Optimising the number and location of: Interim Intermediate Level Waste (ILW) storage facilities on Magnox Limited and EDF Energy sites and FED Treatment (Dissolution) Facilities in Magnox Limited*” which was open for comment until 31st January 2014. (3)

The paper contained similar proposals to move 144 tonnes of nuclear waste the length of the West Country, in lorries from Gloucestershire to West Somerset. This would involve around 70 lorry loads of Fuel Element Debris waste from the Oldbury power station being moved to Hinkley Point A. (4) Oldbury would also send waste in 100 lorries of other Intermediate Level Waste (ILW) to Berkeley. If the proposals are approved, new storage facilities will be built at Hinkley A and Berkeley. (5) West Somerset Council opposes extra nuclear waste being brought into the Hinkley area. (6)

The plans also involve building a new dissolution plant to process fuel element debris (FED), which consists mainly of Magnox metal and graphite, at Hinkley, with FED arriving from Oldbury. West Somerset Council said the plant, which does not yet have planning approval, would operate for about five years processing FED waste from Hinkley A and a further two and a half years to process the same type of waste from Oldbury.

FED would also be sent from Sizewell to an existing dissolution plant at Dungeness, and a third dissolution plant is about to open at Bradwell. At Berkeley, Hunterston A and Trawsfynydd, the NDA plans to package the FED for long-term storage and disposal without the prior application of dissolution. In general dissolution is not considered to be an appropriate treatment for FED at these sites due to progress already made in the construction of interim waste storage facilities.

The plans to open the FED dissolution plant at Bradwell and discharge effluent into the Blackwater Estuary have upset the region's famous oyster farmers. FED dissolution involves dissolving magnox metal fuel cladding in acid to reduce and capture radioactive material before discharging the liquid by-product into the sea. The process is due to start in March but West Mersea oyster fishermen fear too little is known about the potential impact the effluent could have on the fragile population of native oysters that inhabit the area. In December, the estuary was designated a Marine Conservation Zone (MCZ) by the Department for Environment, Food and Rural Affairs (Defra) to protect the oysters, which have been farmed there since Roman times. However, both Magnox, which operates the plant at Bradwell, and the Environment Agency say the liquid discharges will be within safe limits.

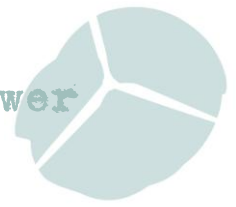


Meanwhile, the Ministry of Defence's (MOD) Submarine Dismantling Project (SDP) has published a provisional shortlist of candidate sites for the storage of Intermediate Level radioactive Waste removed from nuclear-powered submarines after they have left Naval Service and been defueled. The list is Aldermaston, Burghfield, Sellafield, Chapelcross and Capenhurst. (8)

See NFLA Briefing on Submarine Dismantling, October 2013

http://www.nuclearpolicy.info/docs/radwaste/Rad_Waste_Brfg_44_MOD_SDP_ILW_storage.pdf

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 2. Gazette 15th Jan 2014 http://www.gazette-news.co.uk/news/local/10938079._/
 3. <http://www.nda.gov.uk/documents/upload/Optimising-the-number-and-location-of-facilities-on-Magnox-Ltd-and-EDF-Energy-Sites-Preferred-Option-for-Comment-November-2013.pdf>
 4. Western Daily Press 19th Jan 2014 <http://www.westerndailypress.co.uk/Somerset-council-oppose-Oldbury-nuclear-waste/story-20464536-detail/story.html>
 5. BBC 31st Jan 2014 <http://www.bbc.co.uk/news/uk-england-25961326>
 6. BBC 18th Jan 2014 <http://www.bbc.co.uk/news/uk-england-somerset-25773520>
 7. East Anglian Daily Times 12th Feb 2014
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9. Waste Transport

The fourth sea shipment of vitrified High Level Waste (HLW) in 132 canisters has begun its six week journey from Sellafield to travel half way round the globe to Japan left, heading into the teeth of a major storm on Valentine's Day. Around 900 canisters in total are scheduled to be returned to Japan under the reprocessing contracts signed with a number of Japanese utilities several decades ago. According to Cumbrians Opposed to a Radioactive Environment, these shipments of dangerously radioactive wastes are wholly unnecessary and pose risks to the marine environment and en-route communities. Japan has nowhere to dispose of this waste. (1)

The shipment to Japan didn't get much press coverage in the middle of storms and floods, but waste transport in general seems to have been in the news rather a lot lately.

A freight train believed to be the sort used for taking spent nuclear fuel to the Sellafield site in Cumbria hit a car on a level crossing in January. No one was injured but both drivers were treated for shock. The train was not loaded at the time. The train was travelling from the Sellafield power plant in West Cumbria to Crewe in Cheshire. (2)

Discussions are ongoing about how to move 26 tonnes of "exotic fuel", which includes plutonium and highly-enriched uranium, from Dounreay in Caithness to Sellafield in Cumbria. Serious concerns have been raised over the proposals. If the material is moved by train it would have to pass through densely populated areas. Director of Friends of the Earth Scotland, Dr Richard Dixon, said the Cumbrian incident highlighted the risks involved. (3)

A rail freight wagon carrying nuclear waste was derailed at a depot in Drancy, 3 km northeast of Paris on 23 December 2013. The wagon carried spent fuel from the Nogent nuclear power plant destined for AREVA's reprocessing plant at La Hague in Normandy. Although no leakage of radiation was measured at the accident location, the Nuclear Safety Authority (ASN) reported that subsequent testing by AREVA revealed a hotspot on the rail car that delivered a dose of 56 microsievert. An investigation into the origin of the contamination is underway. (4)

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<http://www.corecumbria.co.uk/newsapp/pressreleases/pressmain.asp?StrNewsID=334>
 2. BBC 15th Jan 2014 <http://www.bbc.co.uk/news/uk-england-25742406> and NW Evening Mail 15th Jan 2014 <http://www.nwemail.co.uk/home/update-13-15-train-involved-in-silverdale-smash-could-have-been-carrying-empty-nuclear-flasks-1.1109989> and CORE Briefing 15th Jan 2014 <http://www.corecumbria.co.uk/newsapp/pressreleases/pressmain.asp?StrNewsID=331> Morning Star 16th Jan 2014 <http://www.morningstaronline.co.uk/a-e91c-Level-crossing-crash-exposes-dangers-of-nuclear-trains>
 3. Dundee Courier 17th Jan 2014 <http://www.thecourier.co.uk/news/scotland/environmentalists-warn-of-nuclear-train-dangers-1.177798>
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10. ECO disaster

There's a major catastrophe under way - the whole programme of solid wall insulation, which is supposed to be advancing via the Energy Companies Obligation (ECO), has almost completely disappeared before our eyes, says Alan Whitehead MP. Britain has some of the least energy efficient housing in Europe. If we do not seriously get to grips with our collective home energy efficiency now, then we severely lessen any chance we might have to reduce overall carbon emissions to anything like acceptable target levels by the 2030s.

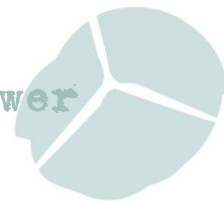
The Committee on Climate Change is clear that to meet the terms of the third carbon budget (2018 to 2022) we need to have externally clad (or otherwise insulated) something like 2.2 million homes. By the fourth budget (2023 to 2027) some 3.5 million homes will need to have been treated. Last year, as DECC records, about 16,000 such homes were clad, making it only a matter of 230 years or so before the 2027 target is reached.

Over the past few weeks it's become apparent that any hopes we might have had of some progress being made in that fundamental task are being dashed. This is because energy companies are pulling out of what could have been the white hope of ECO; the local area-based schemes that had been developed in good faith by local housing associations and local authorities across the Country.

The ECO extension until 2017 means that companies will now be obliged to only insulate around 100,000 homes by 2017, instead of the target of about 180,000 by 2015. Because of the way the ECO obligation is calculated, energy companies can now plump for cheaper measures in order to discharge their obligation. (1)

Two cheers for DECC's Community Energy Strategy (2) says Alan Whitehead. (3) It's been long overdue; energy production and energy saving at community level has long had enormous potential. Indeed, as the Secretary of State describes in his forward, with a really fair wind we could see a substantial return to a localised energy landscape, with the possibility of schemes involving local communities supplying enough electricity for 1 million homes by 2020. That level of provision would take community energy out of the niche into which many 'exemplars' of community action are often placed in - interesting but inherently small time - and into the realm of significant. Furthermore it would also secure contributions to the national energy balance.

But for any sort of community energy strategy to work, there needs to be some joined up policy between DECC, local government institutions, and the Treasury (to name but three departments) to ensure that the landscape really is propitious. The Community Energy Strategy tells us that the department is going to have '*a programme of engagement with communities and local authorities in the Energy Companies Obligation*' (ECO). But several local authorities and local communities HAVE been very engaged in ECO, to the extent that they were doing exactly what the strategy says - getting local partnerships together, securing external funds, building local interest, and easing the path for large schemes of community energy efficiency uplift - using ECO. The local authority in Southampton (which is Alan Whitehead's constituency) has, among a number of others, enthusiastically trodden that path. Southampton was about to sign up for a programme that would have secured the cladding of hundreds of hard to treat homes,



to the immense benefit of local residents. But then the Prime Minister ‘reviewed’ ECO. The result of that review has been that such schemes up and down the country have seen partners pull out because they are no longer obliged to bank the carbon savings they thought they were obliged to over the period originally stipulated.

The net result of this is that some very bruised local communities and local authorities may not go near such schemes again because of the mess they now find themselves in as a result of believing that such community energy projects could work.

Proposed cuts to ECO have thrown social landlords’ retrofit plans into disarray. The extent to which energy companies’ appetite for more expensive hard-to-treat measures such as solid-wall insulation has evaporated is becoming clear - and it is extremely worrying. Southampton Council is attempting to resuscitate a £30 million ECO deal to retrofit 2,000 social homes but the Council is being told it might get less than a third of the contribution it was expecting. Given that around half of the people in fuel poverty live in solid-wall properties the significant cuts outlined pose a major question over how the government and landlords will be able to help the fuel poor in social housing. (4)

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1. Alan Whitehead MP 28th Jan 2014 <http://alansenergyblog.wordpress.com/2014/01/28/rip-eco> and Inside Housing 17th Jan 2014 <http://www.insidehousing.co.uk/7001679.article>
 2. Community Energy Strategy DECC 27th January 2014 <https://www.gov.uk/government/publications/community-energy-strategy>
 3. Alan Whitehead MP 13th February 2014 <http://alansenergyblog.wordpress.com/2014/02/13/making-community-energy-strategies-work/>
 4. Inside Housing 13th Feb 2014 <http://www.insidehousing.co.uk/home/analysis/the-end-is-nigh-for-eco/7002141.article>



11. Solar Prospects

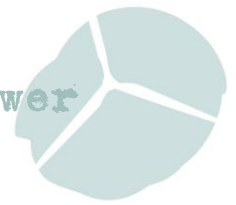
A new study suggests that household rooftop solar PV systems will soon generate electricity cheaper than coal. And it won't have the delivery costs. (1) And leading investment house Deutsche Bank has dramatically lifted its demand forecasts for the global solar industry – predicting that 46 gigawatts (GW) of solar PV will be installed across the world in 2014, before jumping by another 25 per cent to 56GW in 2015. (2)

Now Britain's sunniest city wants to become the solar powered capital of the UK by 2020. The Bristol Solar City initiative was launched by the City Mayor, George Ferguson - as part of the wider Big Green Week festival. James Lancaster, chairman of Bristol Solar City, said: *"While an ambitious task Bristol is well placed to meet the challenge. Bristol has shown itself to be a leader in sustainability and renewable technologies; we've been in the top five of the UK's Greenest cities for the last six years and are shortlisted to be European Green capital 2015. Bristol is also the sunniest of the UK's major cities, we have a reputation for making things happen in our communities."* (3)

Solar farms in the UK will more than double in number this year despite a Government pledge to stop them from 'blighting the countryside'. There are currently 120 large solar farms of 10 acres and above. Schemes awaiting construction or in planning mean that another 150-200 will probably be in operation by the end of 2014. (4)

Imperial College says Britain could get as much as 40% of its electricity from solar power on sunny days by 2020. Ten million homes in the UK should have their roofs covered with solar panels in the next six years, if the country is to fulfil its renewable energy potential. That number - of more than a third of households generating energy from the sun - would allow the UK to produce about 6% of its annual electricity needs from solar power, with as much as 40% coming from the panels on sunny days in summer, by 2020. These figures are comparable to those of Germany, which has made a major push on solar power in the last decade. Installing more solar panels brings the costs of the technology down dramatically, because of economies of scale, as the example of Germany and other countries shows. By 2030, the cost of solar should be comparable to that of even the dirtiest forms of coal, and of gas, said Ajay Gambhir, of Imperial College London. (5)

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1. Renew Economy 28th Jan 2014 <http://reneweconomy.com.au/2014/rooftop-solar-pv-will-soon-be-cheaper-than-coal-63562>
 2. Renew Economy 7th Jan 2014 <http://reneweconomy.com.au/2014/deutsche-bank-predicts-second-solar-gold-rush-40084>
 3. PV Compare 14th Jan 2014 <http://www.pvcompare.net/en/BRITAIN-S-SUNNIEST>
 4. Times 21st Jan 2014 <http://www.thetimes.co.uk/tto/environment/article3981050.ece>
 5. Guardian 29th Jan 2014 <http://www.theguardian.com/environment/2014/jan/29/uk-10-million-homes-solar-panels-2020>



12. Nuclear Innovation

A significant expansion in nuclear power generation, beyond the immediate target of 16GW may be required if CO₂ emission targets are to be met. A cross-government review, undertaken in response to the House of Lords' Science and Technology Committee's report on UK nuclear research and development (R&D) capabilities, has resulted in the publication of a suite of documents available on the Government website. These include the Nuclear Industry Strategy, a Nuclear Energy Research and Development Roadmap, a Nuclear Industrial Vision Statement, a Long Term Nuclear Energy Strategy, and a Civil Nuclear Research and Development Landscape Review.

DECC says investment in innovation will help to decrease costs, increase capacity, decrease delays to construction and demonstrate efficient waste and decommissioning processes. It has been estimated that investment in nuclear innovation could provide benefits valued between £5 billion and £40 billion by 2050 and £5 billion and £90 billion by 2100. It would also help create UK based business opportunities that could contribute between £1.5 billion and £13 billion to GDP by 2050. (1)

And the subsidies continue with the NDA and other public bodies offering a total of up to £13 million investment for new technologies covering new build, current operations and decommissioning. The collaboration between the UK innovation agency the Technology Strategy Board, the NDA and DECC is aimed at helping UK-based businesses take advantage of the opportunities arising following the recent agreement on Hinkley Point C. The funds will be made available early in 2014 as part of a drive to grow a robust, sustainable UK supply chain through the development of innovative products and services for the nuclear sector. The initiative will focus on key technology areas such as construction, manufacturing, operation, maintenance and decommissioning and waste. (2)

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1. DECC 8th Jan 2014 <https://www.gov.uk/innovation-funding-for-low-carbon-technologies-opportunities-for-bidders>
 2. Caithness Business 8th Jan 2014 <http://www.caithness-business.co.uk/article.php>