NuClear News No. 17
April 2010

1. Europe - 100% Renewable

Europe could meet all its electricity needs from renewable sources by 2050 according to a new report by services giant PricewaterhouseCoopers.(1) A "super-smart" grid powered by solar farms in North Africa, wind farms in northern Europe and the North Sea, hydro-electric from Scandinavia and the Alps and a complement of biomass and marine energy could render carbon-based fuels obsolete without the use of nuclear energy even in France.

Achieving all-renewables electricity will depend less on new technology than on revamping Europe's legal and regulatory framework. Most of the technical components are already available. To become a reality, such a vision will require a regional power system based on a super-smart grid and the rapid scaling up of all forms of renewable power.

The report quotes Prof Dr Peter Hoppe, Head of Geo Risks Research, Corporate Climate Centre, Munich Re:

"*The proper combination of decentralised local renewable power generation and large solar power plants in the deserts has the potential to provide all the energy that will be needed. The precondition for this energy revolution is both a smart grid to manage the volatility of decentralised renewable power generation and a Super Grid to link large renewable plants with the energy users over long distances.*"

If the road to a clean energy future seems too long, check your map, says the Rocky Mountain Institute. (2) Some say "we shouldn't expect" clean technologies to significantly dent fossil fuel use anytime soon. But while new energy innovations in solar, wind and electric vehicles may take years to overtake existing products or technologies, there are several ways to make the road a bit shorter. Reducing the size of the energy market with energy efficiency measures is one such way. In the US electric productivity (measured in dollars of gross domestic product divided by kilowatt–hours consumed) varies dramatically from state-to-state. If lower performing states could achieve the electric productivity of top performers, the U.S. could save 1.2 million gigawatt-hours—equal to displacing over 60% of America's coal-fired generation.

As in Europe, the greatest capability for energy efficiency savings is in the buildings sector, which accounted for about 70% of U.S. electricity consumption in 2007. For example, a $550 million renovation of the Empire State Building

is expected to save 38% of the building's energy. The project, which includes refurbished windows, high-efficiency heating and cooling systems, improved insulation, better ventilation control and a tenant energy management system, should save the owners $4.4 million annually with the energy efficiency measures paying for themselves in less than five years.

Similar efficiency opportunities are currently being captured in the transportation sector. Many of the barriers holding back electric vehicles—namely cost, battery size, range and charging infrastructure—can be overcome by reducing vehicle weight to increase efficiency.

(1) 100% Renewable Electricity: A roadmap for Europe and North Africa, Price Waterhouse Coopers, March 2010 http://www.pwc.co.uk/pdf/100_percent_renewable_electricity.pdf

(2) If the road to a clean energy future seems too long, check your map, by Kelly Vaughn, Rocky Mountain Institute 9th March 2010
http://www.rmi.org/rmi/Clean+Energy+Road+Seems+Too+Long

2. A Renewable Heat Scenario

Heat for homes, businesses and industrial processes accounts for 49% of UK energy demand. Neil Crumpton of Friends of the Earth has sketched out a scenario which sets out the energy infrastructure and transition to that infrastructure needed to achieve a UK policy target of zero or 'negative' carbon emissions by 2050. (1)

Crumpton says we have moved quickly from misleading public consultations about a 'replacement' 10 GW nuclear programme to today's position with the nuclear lobby and senior civil servants talking about a 16 GW 'first wave' of new reactors by 2025 and a second wave of 16 GW after that. Within 25 years we may have 30 GW or more of new nuclear stations supplying what could be about 20% of UK 'final' energy. Yet the various non-nuclear options have not effectively been laid out, let alone debated. For example, modern heat pumps might supply a similar amount of renewable energy in the same period but the public have virtually no knowledge of this technology. Similarly nearly as much 'wasted' energy could be harnessed from 30 GW of power stations by laying urban heat grids (hot water pipe networks to homes and work places) and 'clustering' large industrial heat users.

The scenario focuses on the heat sector because the choice of heat infrastructure can significantly facilitate a cost effective, secure, and low-carbon transition, from a system with Combined Heat and Power with district heating based on coal and biomass with Carbon Capture and Storage (CCS), to a UK powered by its indigenous renewable energy resources by about 2050. The scenario estimates that UK primary and final energy demand will fall by around 50% and 40% respectively, excluding aviation and marine fuel use. There would be a progressive reduction and phase out of fossil methane by around 2040 and the widespread construction of urban heat grids around the UK's cities and towns by 2030. The heat grids would partly be supplied by heat pumps and partly by fast response gas turbines with high overall energy efficiency in windfarm load-following mode.

The suburban gas network would be progressively upgraded to supply low-pressure hydrogen or bio-methane to domestic gas heat pumps/boilers or replaced by electric heat pumps, all options augmented by solar thermal panels. The urban heat grids would distribute on demand about 15% of the UK's low-carbon energy needs as hot water. Much would be otherwise wasted reject heat from CCS power stations. The heat grids also have the advantage of being able to store large quantities of hot water in large 'accumulators', potentially gasometer scale. Other energy storage technologies, such as molten salt stores, electrolysers and compressed air, would store peaking renewable electricity (e.g. as heat insalts, hydrogen, synthesized liquid fuels) and reconvert much back to electricity on demand. All reject heat from such 'regeneration' from turbines, cells, etc. would be utilized in the heat grids. Such an efficient energy storage and electricity regeneration capability would be a significant aid to delivering the UK's large but highly variable renewable energy resources, particularly wind energy, to consumers as and when demanded. The heat grids would incorporate community/district scale air, ground and water source heat pumps and facilitate the cost effective harnessing of some larger renewable energy resources or projects (e.g. geothermal energy, large-scale solar thermal arrays, etc.). Crucially, heat grids would double the efficiency of significant carbon-negative power generation using premium carbon-neutral fuels.

To complement Neil Crumpton's scenario focused on heat, Prof Dave Elliott looks at electricity in Renew 184. He points out that nuclear will be struggling just to replace reactors as they are shut down. And according to Government statistics the nuclear load factors were only 69.3% in 2006, 59.6% in 2007, and 49.4% in 2008. So it may not be very reliable.

(1) Decarbonising the Heat Sector, Renew NATTA Newsletter 183. Available on Subscription at http://www.natta-renew.org/ See summary version Renew On-line 83 http://eeru.open.ac.uk/documents/ROL83.doc

3. Parliament Reports on National Policy Statements

The House of Commons Energy and Climate Change Select Committee took the lead in scrutinising the six energy National Policy Statements (NPSs) issued in draft by the government on 9 November. The Committee held 10 morning and afternoon evidence sessions, interviewed 55 witnesses. Its report was published on 23rd March. (1)

The committee found the NPS process failed to consult the public adequately. It questioned whether effective arrangements were in place to deal with radioactive waste from nuclear power stations and whether the new power stations are even necessary. Paddy Tipping, a Labour member of the committee, said evidence given to the committee suggested that gas could provide enough energy in the future, therefore it may not be necessary to build 10 nuclear power stations or as much renewables. He said Parliament should be able to vote on the policy. (2) The committee said it had "significant" concerns that Britain might fail to meet its goal of cutting emissions by 80 per cent by 2050 because the guidelines had not been properly thought-through.

On new nuclear build, the Committee questioned the government's assertion that effective arrangements will be in place to manage radioactive waste. (3) Plans to store waste for up to 160 years before burying it permanently underground were condemned as "bizarre" by Paddy Tipping, acting chairman of the Committee. He said that the Department for Energy and Climate Change had failed to consult MPs or the public properly on a range of matters, including the handling of spent nuclear fuel. He said it was "rather odd" that Britain was pressing ahead with a fleet of new nuclear reactors with only a vague idea of what would happen to their waste. The committee demanded "significantly more detail" on what storing spent waste fuel for 160 years might mean for local communities. (4)

The Committee said it received conflicting evidence on whether the Managing Radioactive Waste process would yield a suitable site and whether geological disposal was technically feasible. It said it is not convinced that the progress to date supports the Government's robust assertion that suitable arrangements will be in place to manage the UK's waste legacy. In a rather bizarre leap of logic it says:

"*…the Government has no choice but to find a solution, regardless of a decision on nuclear new build [and] waste arising from new nuclear power stations will not pose a significant additional challenge in terms of finding a permanent storage solution.*" (5)

The possibility that there might not be a solution to the problem of nuclear waste disposal was not considered. (6)

(1) The proposals for national policy statements on energy, Energy and Climate Change Committee, Volume 1, 23rd March 2010.
http://www.publications.parliament.uk/pa/cm200910/cmselect/cmenergy/231/231i.pdf

(2) Telegraph 23rd March 2010
http://www.telegraph.co.uk/earth/environment/climatechange/7499117/MPs-criticise-plans-for-nuclear.html

(3) Planning 22nd March 2010
http://www.planningresource.co.uk/bulletins/Planning-Resource-Daily-Bulletin/News/991871/Report-slates-draft-energy-NPSs/

(4) Times 23rd March 2010
http://business.timesonline.co.uk/tol/business/industry_sectors/natural_resources/article7071952.ece

(5) para 71, page 28.

(6) See Written Evidence by Nuclear Waste Advisory Associates, page Ev428

The proposals for national policy statements on energy, Energy and Climate Change Committee, Volume 2, 23rd March 2010.
http://www.publications.parliament.uk/pa/cm200910/cmselect/cmenergy/231/231ii.pdf

4. Lords on CoRWM

The House of Lords Science and Technology Committee has reported on its latest inquiry into radioactive waste which focuses on how CoRWM has performed since its reappointment in 2007 and considers whether its remit has proved appropriate. From a standpoint of strong support for a geological disposal facility (GDF), the Lords make a series of recommendations designed to strengthen CoRWM, enabling it to better hold the Government to account on their progress in developing a GDF to make sure the Managing Radioactive Waste Safely (MRWS) programme is implemented as rapidly as is needed.

The Lords express concern that neither the Government nor CoRWM, in their evidence, gave the impression of having any sense of urgency, they want CoRWM to play a more active role in driving forward the MRWS programme through

scrutinizing the Government's progress. To help them carry out this role, the Government should publish clear policy milestones and include an assessment of their progress against these milestones in an annual report.

CoRWM's remit is to advise as well as to scrutinize, so the Lords want CoRWM to be asked to comment formally on draft policy documents affecting the MRWS programme based on the comprehensive consultation and evidence gathering processes CoRWM usually employs. Although not requested to do so by the Government, CoRWM did respond to the public consultation on the NPSs, but its submission was not prepared through CoRWM's usual process of consultation and evidence gathering. Professor Pickard told the Lords that if the Government requested a formal response to a consultation then the Committee would offer advice based on its "normal rigorous process".

Greenpeace expressed concerns to the Lords that CoRWM was not able "*to undertake stakeholder work, or independent research, to the extent it would like*" due to a lack of funding. But Chairman of CoRWM, Professor Robert Pickard, rather undermined this bid to increase CoRWM's budget: "*I think we would say that our funding is adequate at present for the task we have in hand*".

While the Lords called for CoRWM's membership to be augmented with experience of business and practical on-site operations and engineering, it disagreed with Greenpeace's assertion that it would need social and ethical expertise.

Interestingly, the Nuclear Industry Association said that "*there is a danger in re-opening issues ... For example, we think opening the issue of borehole disposal again is neither helpful nor productive*". The Lords, however, said CoRWM should keep a watching brief on technological alternatives within the context of a geological disposal programme. Probably just as well, given that less than two months after the US proposed repository at Yucca mountain has been abandoned, deep borehole repositories seem to be on the agenda again across the pond. If the US moves ahead with deep boreholes, Yucca mountain may not be the only centralised repository to be abandoned. (2) (See Swedish story below)

(1) Radioactive Waste Management: A Further Update, House of Lords Science and Technology Committee. 25th March 2010 http://www.publications.parliament.uk/pa/ld200910/ldselect/ldsctech/95/95.pdf

(2) New Scientist 6th Apr 2010

http://www.newscientist.com/article/mg20627544.600-drilling-deep-under-the-us-to-dispose-of-nuclear-waste.html?DCMP=OTC-rss&nsref=online-news

5. End of the road for Swedish Repository?

The UK Government's Draft National Policy Statement (NPS) for Nuclear Power Generation (EN-6) concludes that:

"*…the Government is satisfied that effective arrangements will exist to manage and dispose of the waste that will be produced from new nuclear power stations. As a result the* [Independent Infrastructure Planning Commission] *IPC need not consider this question.*" (1)

"*The arrangements for the management and disposal of waste from new nuclear power stations: a summary of evidence*" sets out the evidence for this assertion. (2) This document claims that programmes in Finland and Sweden are well advanced, aiming for each of these countries to have a Geological Disposal Facility (GDF) in operation by 2020. So it is particularly instructive to look at progress in Sweden. (The Finnish safety case work relies almost entirely on Swedish work.)

After nearly three decades of R&D efforts, the WISE/NIRS Nuclear Monitor (3) says close observers are asking themselves if perhaps the Swedish nuclear industry has reached a dead end on nuclear waste disposal. The question has arisen because industry's jointly owned company for nuclear waste solutions, SKB AB, published a "preliminary" environmental impact statement (EIS) on the KBS-3 scheme in December which fails to meet even the most rudimentary requirements of an EIS.

Consultation has never been quite what Swedish MPs envisaged (4), but in January 2010 the SKB AB unilaterally terminated public consultations altogether, despite the fact they are mandated by the Swedish Environmental Code, and an integral part of the approval process.

The KBS project has encountered difficulties with both of the man-made barriers that are intended to isolate the fuel waste – there is empirical evidence that copper canisters will corrode and uncertainty about the behavior of the clay buffer in the repository after closure.

The essential purpose of an Environmental Impact Statement (EIS) is to describe a project's actual, probable and possible consequences for human beings and the natural environment. Yet the document SKB AB issued in December hardly looks at the long-term safety of the repository, and there is almost a total absence of discussion concerning the radiological consequences. Nor does the EIS evaluate alternative methods of nuclear waste management, and there is no attempt to justify the choice of KBS-3 in terms of "best available technology". And there is no attempt to convince that the location (immediately adjacent to the Forsmark reactors in Östhammar) is the best Sweden has to offer. The company simply states, without supporting evidence, that the proposed method for nuclear fuel waste disposal will not have any impact on human beings or the natural environment.

(1) Draft National Policy Statement for Nuclear Power Generation (EN-6), DECC, November 2009 Paragraph 3.8.20 http://data.energynpsconsultation.decc.gov.uk/documents/npss/EN-6.pdf

(2) The arrangements for the management and disposal of waste from new nuclear power stations: a summary of evidence, DECC November 2009 http://data.energynpsconsultation.decc.gov.uk/documents/wasteassessment.pdf

(3) Nuclear Monitor No.706, 26th March 2010. Available on subscription only. http://www10.antenna.nl/wise/

(4) Hulten, C. Still Waiting for Glasnost: Notes on NGO Relations with the Nuclear Establishment in Sweden and the Baltic Sea Area, Milkas, August 2007
http://www.nonuclear.se/files/hulten200708.pdf

6. British Energy – poor deal

The House of Commons Public Accounts Committee has reported on the sale of the Government's interest in British Energy. (1) The Committee felt the £4.4 billion price the Government got from EDF for the sale was good, mainly because of the high price of power at the time. However the committee strongly criticised the Government for not getting guarantees from EDF as part of the sale that it would build new reactors without subsidy.

The ostensible purpose of the sale was to ensure the building of new reactors without public money, but the deal did not include any binding commitment to build reactors, either with or without a subsidy. And the Department for Energy and Climate Change (DECC) also failed to establish whether the supplier had ever built a nuclear power station without public money in the past. Even worse, DECC neither knows how much nuclear generating capacity will be required to meet future energy needs, nor does it have convincing contingency plans. (2)

The £4.4 billion sale proceeds were allocated to the Nuclear Liabilities Fund, to pay towards the future cost of decommissioning British Energy's existing power stations. As required by the Treasury, proceeds were invested in gilts, which carry a lower risk of capital losses compared to equity investments but, in the longer term, may offer lower returns. This could affect the ability of the Fund to cover British Energy's liabilities. The Committee found, as it has done on three previous occasions, that there are still weaknesses in the monitoring and management of the risks relating to these liabilities. (3)

(1) The sale of the Government's interest in British Energy, Public Accounts Committee, 24th March 2010.
http://www.publications.parliament.uk/pa/cm200910/cmselect/cmpubacc/356/35602.htm

(2) Independent 24th March 2010
http://www.independent.co.uk/news/business/news/british-energy-sale-to-french-was-a-poor-deal-mps-conclude-1926082.html

(3) Telegraph 24th March 2010
http://www.telegraph.co.uk/finance/newsbysector/energy/7506617/British-Energy-sale-exposes-taxpayer-to-serious-liabilities.html

7. Justification

Pressure on the government to organise an independent inquiry into the Justification for new reactor types intensified with a call for action from a group of 90 high-ranking academics, politicians and technical experts. The huge lobby says the "climategate" email scandal and other events have shaken public trust in the scientific governance of environmental risk, making a wider assessment of nuclear power more important than ever. (1)

Paul Dorfman, an energy policy research fellow at Warwick University who has been coordinating support for an inquiry, said more debate was needed for a decision on nuclear to have full democratic backing. "*The kind of consultation we have had so far has been flawed and inadequate. The government has put the cart before the horse by wanting endorsement before either the design of the reactor and the way waste will be treated has been decided. There is a democratic deficit here that needs correcting*", he said.

Nuclear consulting engineer John Large, and a long list of academics, such as Jerome Ravetz of Oxford University and Mark Pelling of King's College London, as well as MPs including Simon Hughes of the Liberal Democrats, Michael Meacher from Labour and Jane Davidson, the environment minister in the Welsh assembly have joined the call for an inquiry.

Simon Hughes, the Liberal Democrat spokesman for energy and climate change, spoke at a meeting in Westminister organized by the Nuclear Consultation Group. He called for an independent public inquiry: "*It would be completely unacceptable for the government to rush through new nuclear in its last days in office without a public inquiry.*" (2)

Simon Hughes was attacked by Mark Lynas in the New Statesman, for his efforts. (3) Lynas accused the Lib Dems of "*attempting to be populist but appearing merely outdated*". He says he was puzzled to hear Hughes on Radio 4's *The World Tonight* discussing the "health effects" of nuclear power as a reason for his opposition to it, "*even though no plausible scientific case can be made*". Lynas relies on Wade Allison's new book, *Radiation and Reason* which says evidence from Chernobyl and Hiroshima demonstrates that very low doses of radiation are unlikely to have negative health effects, and may even be beneficial. Lynas says after Chernobyl roughly 50 died; others with lower doses have closer-to-normal mortality rates.

Hughes responded saying Lynas's attack on Liberal Democrat energy policy was one of the most delusional pieces of writing he has read in a long time, and utterly lacking in foundation. (4) He says the reason he has called for a Justification Inquiry is precisely so that scientific evidence could be examined in the open, and that nuclear scientists, other experts and the public can participate in the decision-making process for new nuclear power in a meaningful way. If Lynas is so convinced that the health detriments of nuclear are simply an urban myth as he claims, he too should have no problem with a public inquiry. He may however also know that the nuclear power lobby is worried that since the publication of the KiKK study by the German government in 2008 "justification" may not survive more detailed scrutiny.

(1) Guardian 11th March 2010
http://www.guardian.co.uk/business/2010/mar/11/independent-inquiry-nuclear-power-stations

(2) Utility Week 11th March 2010
http://www.utilityweek.co.uk/news/uk/electricity/politicians-and-academics-call.php

(3) New Statesman 26th March 2010
http://www.newstatesman.com/blogs/the-staggers/2010/03/lib-dems-lynas-nuclear-energy

(4) New Stateman 7th April 2010
http://www.newstatesman.com/blogs/the-staggers/2010/04/nuclear-power-lynas-climate

8. More Facilitative Actions

Draft legislation to create a new civil nuclear regulator has been published. It is based on the proposals contained in an earlier 2009 consultation document entitled 'Consultation on the Restructuring of the Health and Safety Executive's Nuclear Directorate'. (1) The proposal is to create an independent Office for Nuclear Regulation (ONR), which will be "*focused on and dedicated to ensuring the safe operation of new nuclear in the UK.*" (2) The original consultation document, together with the Government response to the consultation and the full Impact Assessment is available. (3)

The Government also announced the launch of consultations on the methodology for determining how a fixed unit price for disposal of nuclear waste will be set (4) and regulations clarifying requirements set out in the Energy Act 2008 in relation to Funded Decommissioning Programmes.

The Fixed Unit Price consultation follows the publication of three pre-consultation discussion papers. (5) The consultation document now sets out changes made as a result of feedback during the pre-consultation process; the main stages of the proposed methodology to determine a Fixed Unit Price and worked examples of how it would be calculated using this methodology and the Government's updated estimates of the costs for decommissioning, waste management and waste disposal.

One of the changes being proposed is that the Government should take title to nuclear waste and spent fuel earlier, so that it is aligned with the operators decommissioning timetable rather than waiting for the Geological Disposal Facility to be available. Operators will also be allowed to defer the setting of their Fixed Unit Price, and prospective investors will instead be offered an "expected Fixed Unit Price". The Government insists, however, that "*operators will meet their full share of waste management costs. The Government would therefore need to be compensated for the waste management costs that it would incur from Early Transfer.*"

Also issued on the same day was a consultation on the financing arrangements for decommissioning and waste handling regulations. It's a consultation on draft regulations derived from the Energy Act 2008 which seeks to put in place regulations to recover the costs associated with the consideration of a Funded Decommissioning Programme (FDP), including the costs of obtaining advice in relation to the FDP or in relation to the information about the FDP. It also amends the procedure as set out in the Energy Act 2008 for modifying an approved FDP, and defines the content of an FDP. (6)

(1) DECC 25th March 2010
http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/nuclear/new/reg_reform/reg_reform.aspx

(2) DECC Press Release 25th March 2010
http://www.decc.gov.uk/en/content/cms/news/pn10_048/pn10_048.aspx

(3) DECC 25th March 2010
http://www.decc.gov.uk/en/content/cms/consultations/hse_restruct/hse_restruct.aspx

(4) Consultation on a methodology for determining a Fixed Unit Price for waste disposal and updated cost estimates for nuclear decommissioning, waste management and waste disposal, DECC 25th March 2010, http://www.decc.gov.uk/en/content/cms/consultations/nuc_waste_cost/nuc_waste_cost.aspx

(5) See Paying for Waste and Decommissioning, NuClear News, No.7 June 2009.
http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo7.pdf

(6) Consultation on the financing arrangements for nuclear decommissioning and waste handling regulations, DECC 25th March 2010.
http://www.decc.gov.uk/en/content/cms/consultations/nuc_dec_fin/nuc_dec_fin.aspx

9. Sellafield Bill

Jamie Reed, former British Nuclear Fuels (BNFL) Press Officer and outgoing Labour MP for Copeland, introduced into Parliament the "*most ambitious and comprehensive piece of pro-nuclear legislation seen in decades*", just days before the House of Commons closed down for the General Election. The Nuclear Fuel Cycle Bill called for continued reprocessing contracts for spent nuclear fuel at Sellafield beyond the end of current contracts, and a new plutonium (MoX) fuel manufacturing plant. The Copeland MP believes the move would reduce the cost of nuclear decommissioning to the taxpayer by generating billions of pounds of commercial revenue and boost nuclear material non-proliferation efforts by turning plutonium and uranium into fuel, instead of classifying the materials as 'wastes' which would then cost even more money to dispose of. (1)

The Nuclear White Paper explained that in the absence of any proposals from industry the Government has concluded that any new nuclear power stations should proceed on the basis that spent fuel will not be reprocessed, but it did not rule out reprocessing. (2)

Now the Nuclear Decommissioning Authority (NDA) has produced a paper (3) which discusses options for spent oxide fuel management, including both overseas fuel, for which the NDA has commercial contracts to reprocess, and waste fuel from the British Energy's AGR power stations. The NDA is carrying out a 'lifecycle assessment' to decide whether spent oxide fuel should be declared a waste; reprocessed or stored for a while before a final decision is made. The options being considered include reprocessing all AGR spent fuel – not just the fuel currently contracted for reprocessing. Since the lifetime of the AGR power stations may extend beyond the predicted lifetime of Thorp, this would require either major refurbishment of Thorp and associated plant, new contracts with overseas reprocessing facilities or the building a new reprocessing plant. Another option is to reprocess as much of the oxide fuels as possible by operating Thorp for as long as practicable.

As far as Jamie Reed's call for a new MoX plant is concerned, it should be noted that the UK Government currently has no defined policy regarding future use of reprocessed uranium and plutonium, but is planning a public consultation in the autumn on proposals for plutonium management. The outcome of this is, according to the NDA, key to decisions "*on whether to pursue an aggressive reprocessing strategy, or adopt a long term storage-only approach and, if so, whether the fuel should be retrievable once 'disposed'*."

The only nuclear facility given the go-ahead by the Labour Government since 1997 – the Sellafield MoX Plant (SMP) - has been an economic and technical failure. (4) Designed to manufacture 120 tonnes of mixed plutonium and uranium oxide fuel every year, for overseas customers, the plant had produced just 6.3 tonnes by April 2009. (5) The performance of the existing Mox plant is officially "under review" 10 years after being built at a cost of nearly £500 million but the bill has soared to around £2 billion due to delays in discharging contracts. (6) According to the

Whitehaven News SMP has just had its best year yet, but it probably didn't even bring the total produced in eight years up to 12 tonnes let along the expected 120 tonnes per year. (7)

The Thermal Oxide Reprocessing Plant (THORP) at Sellafield, which opened in 1994 to reprocess spent fuel from Britain's newer Advanced Gas-cooled Reactors (AGRs), and overseas Light Water Reactors (LWRs), has limped along with a throughput which is neither reliable nor to specification. During its first ten years it managed to reprocess just over 5000 tons of spent fuel, rather than the 7000 tons expected. Given the total order book was only 9,600 tons it should have closed around 2010/11. But accidents and technical problems have delayed closure until at least 2015/6, possibly even 2020. It has just re-started operations after a seven month shut-down. (8)

(1) Carlisle News and Star 7th April 2010
http://www.newsandstar.co.uk/news/copeland-mp-nuclear-bill-should-be-passed-1.692413?referrerPath=/news_round-up_1_50001

See also Hansard 7th April 2010
http://www.publications.parliament.uk/pa/cm200910/cmhansrd/cm100407/debtext/100407-0004.htm#10040729000001

(2) See para 16 of The arrangements for the management and disposal of waste from new nuclear power stations:a summary of evidence, DECC November 2009
https://www.energynpsconsultation.decc.gov.uk/nuclear/managementdisposalwaste/summaryevidencepaper/

(3) Topic Strategy: Oxide Fuel, NDA March 2010 (Doc No. SMS/TS/C2/G0/001)
http://www.nda.gov.uk/documents/upload/Draft-Oxide-Fuel-Topic-Strategy-gate-0.pdf

(4) Independent 7th Apr 2009
http://www.independent.co.uk/opinion/commentators/jean-mcsorley-a-staggering-waste-of-taxpayers-money-1664429.html

(5) CORE Press Release 3rd Apr 2009 http://www.corecumbria.co.uk/newsapp/pressreleases/pressmain.asp?StrNewsID=255

Independent 7th Apr 2009
http://www.independent.co.uk/environment/green-living/a-1631bn-nuclear-white-elephant-1664427.html

(6) Whitehaven News 8th July 2009
http://www.whitehaven-news.co.uk/news/new_plant_at_sellafield_could_create_5_000_jobs__mps_told_1_580005?referrerPath=news

(7) Whitehaven News 7th April 2010
http://www.whitehaven-news.co.uk/news/work-set-to-resume-at-thorp-1.692712?referrerPath=news

(8) See Waste Problems Go On and On, NuClear News No.7 June 2009.
http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo7.pdf

10. View on the Ground

- Northamptonshire County Council's development control committee unanimously rejected a scheme that could have seen 250,000 tonnes a year of low level radioactive waste put into a landfill near King's Cliffe on the border with Cambridgeshire, despite the fact that the proposal was supported by planning officers and the Environment Agency. (1) Augean, the waste management company will appeal against the decision. The company complains of 'bad science' in the decision. The appeal is not likely to be head before August. (2)

- Jonathon Porritt told a packed meeting of the Stop Hinkley campaign in Taunton that a new nuclear power station at Hinkley Point is not needed and would leave an unacceptable legacy of radioactive waste to future generations.(3)

- Sizewell B was shut down manually on 17 March due to higher than normal moisture levels within the containment building and it is uncertain when it will return to service. (4)

- Horizon Nuclear Power, a joint venture owned by E.ON and RWE, says it is hoping to submit a planning application to build new reactors at Wylfa in 2012. (5) This will be followed by an application for Oldbury in 2014. (6) Campaigners staged a protest on the Menai Bridge over plans to build a new power plant on Anglesey. (7)

- Greenpeace campaigner, Joss Garman, says it's not clear if and when Wylfa will be given the green light, let alone when work could start on site, because EdF still holds land vital to the new reactors and doesn't have to sell the land until it is granted planning permission for two new reactors at both Hinkley Point and Sizewell. Wylfa was slated to get an application in for November 2011, but it is now not expected until 2012, so there is already a delay.(8)

(1) Guardian 17th March 2010
http://www.guardian.co.uk/business/2010/mar/17/nuclear-landfill-plans-rejected
(2) Kings Cliffe Waste Watchers.
http://www.kingscliffewastewatchers.co.uk/#
(3) Stop Hinkley Press Release 17th March 2010
http://www.stophinkley.org/PressReleases/pr100317Porritt.htm
(3) Business Financial News 9th Apr 2010
http://www.bfnnews.com/display/?id=3819647&sectionId=standardNews
(4) BBC 30th March 2010
http://news.bbc.co.uk/1/hi/wales/north_east/8594152.stm
(5) Thornbury People 31st March 2010
http://www.thornburypeople.co.uk/sport/Oldbury-Power-Station-s-Timetable-Revealed/article-1959217-detail/article.html
(6) Daily Post 1st April 2010
http://www.dailypost.co.uk/news/north-wales-news/2010/04/01/pawb-in-menai-bridge-protest-over-wylfa-b-55578-26152057/
(7) Left Foot Forward 30th March 2010
http://www.leftfootforward.org/2010/03/new-nuclear-delays-delays-and-more-delays/

11. Energy Policy

Writing in the Guardian the Liberal Democrat's energy spokesperson Simon Hughes says in July 2006 David Cameron gave a convincing and well-reasoned argument explaining why nuclear power must be a "last resort". Later that year he described Labour's enthusiasm for nuclear power as "irresponsible". As Cameron rightly pointed out: "[t]*he problems of nuclear waste haven't been dealt with. They have got to be dealt with in order to make any new investment possible*." Four years on, we're no closer to finding out how to deal with nuclear waste and the Tory leader's point stands as strong as ever. But unfortunately, the Tories no longer seem to care. Indeed, the Tories' new green paper on energy security shows remarkable dexterity in rewriting history, now criticising the Labour government for dragging its feet before finally coming round to support new nuclear. (1)

Hughes continues: "*Both Labour and the Tories claim that they will not provide any public subsidy, but both know that this cannot be true when the nuclear industry that has never been able to survive without it*."

A Conservative government would allow a new nuclear power station to be opened every 18 months according to Greg Clark, the shadow energy spokesman. There would be "no limit" on the growth of nuclear power in Britain under a Conservative administration. (2)

David Cameron also pledged that a Conservative government would raise a carbon tax on coal and gas-fired power stations. Mr Cameron said that the carbon tax would be introduced via reforms to the Climate Change Levy, a tax on electricity production that is imposed on all forms of energy except renewables. The reforms in effect would place a floor under the price of carbon dioxide on the European emissions trading scheme. At €13 per tonne, this is considered to be too low to support the vast investment in offshore wind, nuclear reactors and other infrastructure required to meet emission-reduction targets. (3)

(1) Guardian 22nd March 2010
http://www.guardian.co.uk/environment/cif-green/2010/mar/22/tories-nuclear-energy
(2) Telegraph 19th March 2010
http://www.telegraph.co.uk/earth/energy/7476680/Tories-plan-new-nuclear-power-plant-every-18-months.html
Rebuilding Security: Conservative Energy Policy for an Uncertain World, March 2010
http://www.conservatives.com/~/media/Files/Green%20Papers/Rebuilding-Security.ashx?dl=true
(3) Times 20th March 2010
http://business.timesonline.co.uk/tol/business/industry_sectors/utilities/article7068423.ece

12. Nuclear Levy "not" a subsidy

Ed Miliband says the energy market needs "radical reform", but he denies his plans amount to a subsidy for the nuclear industry because all forms of low-carbon generation will benefit. The government has narrowed the range of energy market reforms it is considering. (1)

The government estimates that at least £110bn needs to be invested in the electricity sector over the next decade to meet ambitious carbon targets and keep the lights on. But companies are reluctant to build low-carbon generation plants, particularly nuclear reactors without knowing what return they will make on the huge up-front investment required. Officials are considering introducing a levy for low-carbon generation like nuclear with costs passed on to all consumers through higher utility bills. This could be in the form of a "low-carbon obligation", similar to the existing renewables obligation, requiring suppliers to pay a higher electricity price to nuclear generators, depending on the carbon price. Miliband insisted that the reforms, which will not be finalised until next year, would not result in additional utility bill increases. He claimed bills will only rise by up to 8% over the next decade, even though regulator Ofgem estimates the increase will be as high as 25%.

The Department of Energy and Climate Change has considered imposing a floor on the carbon price – supported by some nuclear generators such as EDF of France – but critics believe it would be legally difficult to implement because it could interfere with the working of the ETS. (2)

The initial findings of the Energy Market Assessment were published alongside the Budget, narrowing down the options for market reform to incentivise the necessary investment over the next few decades. The report concluded that providing greater certainty on the current carbon price alone will not be enough to drive the long-term change needed. The report sets out a number of options for reform, and further work will be undertaken to assess these options, working closely with the industry, regulator and other interested parties, against criteria of cost-effectiveness, affordability and investor certainty. Proposals will be brought forward for consultation this autumn, with a White Paper following in spring 2011. (3)

Meanwhile Lord Mandelson announced a package of measures to strengthen the UK's civil nuclear supply chain, at the centre of which is an offer of an £80 million loan to Sheffield Forgemasters which makes massive steel forgings for power plants. The loan offer, together with participation in the project from Westinghouse will enable Sheffield Forgemasters to build a major new manufacturing facility for ultra heavy forgings for civil nuclear power and other markets. Business secretary Lord Mandelson said: "*This is not just help for one company. Today we're announcing a willingness to invest that will make the UK a leading provider in the nuclear and the low carbon supply chain*." The government also committed to co-fund the creation of up to 1,000 apprenticeships per year in the nuclear energy sector. (4)

One MP commented: "*that's an interesting way to avoid subsidising the nuclear industry – subsidise their suppliers instead*."

(1) Guardian 25th March 2010
http://www.guardian.co.uk/uk/2010/mar/25/budget-2010-energy-levy

(2) Guardian 19th March 2010
http://www.guardian.co.uk/business/2010/mar/19/low-carbon-power-law

(3) HM Treasury 24th March 2010
http://www.hm-treasury.gov.uk/budget2010_energymarket.htm

(4) Utility Week 17th March 2010
http://www.utilityweek.co.uk/news/uk/electricity/government-strengthens-aid-for.php

13. Marine Energy Boom

The Crown Estate has awarded an unprecedented 1.2GW of wave and tidal energy project leases consisting of six wave energy projects totalling 600MW and four tidal projects amounting to 600MW in the Pentland Firth and Orkney Waters Strategic Area leasing round. The Trade body, Renewable UK says this demonstrates the enormous potential of the UK's wave and tidal energy sector. The sites were awarded to a number of utilities and advanced technology developers including Marine Current Turbines, Pelamis Wave Power, SSE Renewables Developments – joining forces with Aquamarine and Open Hydro, Scottish Power Renewables and EON.

In order to facilitate the transition from research and development to scaling up and delivery, and in response to the Government's Marine Energy Action Plan, Renewable UK has produced a key document published today "The Next Steps for Marine Energy." The document recommends that the government commits a minimum of £220 million in capital support for technology development over the next five years, with the aim of powering 1.4 million homes with marine energy by 2020, and producing an annual sector turnover of £900 million by 2030. (1)

Experts say the Crown Estate announcement heralds the "dawn of a new era" when Scotland becomes a world-leader in the fledgling industry, which has huge potential for growth. The stretch of sea between Caithness and Orkney is the first around the UK to be opened up for the development of marine renewables and almost 40 companies applied for leases. (2)

Meanwhile, nine of the UK's leading renewable energy trade associations have signed up to a joint Manifesto, outlining proposals for the timely delivery of 2020 targets and urging the Government to act now on the looming energy and climate crisis. The 12 proposals would help ensure Britain delivers 15% of its energy from renewables by 2020, fulfilling its EU obligations and building a thriving 'green collar' industry sector in the process. (3)

(1) The Next Steps for Marine Energy: The Industry View on the Marine Action Plan, Renewable UK, March 2010.
http://www.bwea.com/pdf/press/RenewableUK_Marine-Action-Plan.pdf

(2) Scotland on Sunday 14th March 2010
http://scotlandonsunday.scotsman.com/environment/New-era-for-Saudi-Arabia.6150241.jp

(3) Renewable UK 1st April 2010
http://www.bwea.com/media/news/articles/pr20100401.html