

Energy Review Update No 15
October 8th 2007

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1. Nuclear's risky finance

British Energy (BE) claims in its response to the Government's consultation that new reactors don't need to be subsidized provided standard international designs are adopted and fossil fuel alternatives "carry the cost of the carbon emissions associated with their use". (1) UK Ministers are keen to stress there will be no subsidies, but there are no such qualms in America. A new Energy Bill could make new reactors eligible for tens of billions of dollars in government loan guarantees. The US nuclear industry says it needs as much as \$50 billion in loan guarantees over the next two years to finance around 28 planned new reactors. (2) Unsurprising then that *The Daily Telegraph* predicts Gordon Brown will announce plans to underwrite new reactors in the UK or fund some of the waste disposal costs. (3)

NRG Energy has filed an application to build the first new reactors in the US for 29 years, (4) and acknowledges that federal tax incentives and loan guarantees have been key catalysts. The Energy Policy Act offers four different types of subsidies for new reactors. First, it grants up to \$2 billion in insurance against regulatory delays and lawsuits to the first six reactors to receive licences and start construction. Second, it extends the law limiting a utility's liability to \$10 billion in the event of an accident. Third it provides a tax credit of 1.8 cents per kWh for the first 6,000MWh generated by new plants, and most importantly, it offers guarantees for an indeterminate amount of loans to fund new reactors. (5)

Despite these huge subsidies, Florida Power and Light has called them inadequate. (6) Nevertheless, over the next 15 months, the Nuclear Regulatory Commission expects a tidal wave of similar permit applications but this is not a robust renaissance. Reactors are still financially very risky, plans are only under way is because of the subsidies. (7)

Back in Britain, Ministers are adamant any programme must be financed by the private sector rather than the taxpayer. Alistair Darling said when he was Secretary of State for Trade and Industry if the private sector does not provide the huge investments needed, the country will have to do without. Potential investors complain there is still too much risk to commit to such long-term projects. (8) Poyry Energy Consulting (previously Ilex) believes the policies outlined in the Energy White Paper could spell the end of nuclear power, because there is little in the way of positive action for delivering the Government's objectives. It needs to set a high and long-term price for carbon emissions before there is an economic case for new reactors. (9)

Robert Gross of Imperial College says the Government has somehow to persuade the private sector to invest huge sums of money in nuclear reactors (and renewables) when what it really wants to do is invest in new gas-fired stations. (10) The industry feels justified in paying the relatively small amounts of money for UK reactor design assessments, site studies, and other new project pre-development costs, at the moment, but it

is conscious that the really big investment decisions will have to be taken toward 2012, and there are a number of "blocks" to new reactor construction that will have to be removed before then.

Firstly, the private sector would be extremely reluctant to enter into a long-term investment, critically dependent on the cost of carbon, while there is such a lack of certainty about long-term carbon pricing. (11) Sean Gammons of Nera Consulting says "carbon is crucial to the economics of new build". As carbon becomes more expensive nuclear power becomes cheaper. But the volatility of the price of carbon needs to be reduced. This could be done by replacing the EU Emissions Trading Scheme (ETS) with a carbon tax. Or the ETS could be balanced by government acting as a buyer of last resort under a 'cap and collar' system to keep the carbon price within an agreed range. By 2011, there may be enough confidence about the cost of carbon for investors to take the plunge.

Secondly, further clarity is needed on how waste management and decommissioning costs (back-end costs) will be funded. Despite the fact that back-end costs will be incurred far in the future, thus reducing their apparent value today, they "are potentially very significant numbers and there are still considerable uncertainties about them," according to Richard Noble of the Lehman Brothers Investment Bank. (12) The nuclear power consultation document said that developers of new reactors would have to meet their "full share" of waste management costs. Energy Minister Malcolm Wicks explained that this "reflects the fact that the storage facilities and deep repository will be primarily for waste that already exists: this will be for the public sector to fund. (13) The forthcoming Energy Bill would set out how the industry will be required to establish a fund for disposing of radioactive waste from the new plants. (14) BERR officials indicate "fair share" means paying for the proportion of space a nuclear operator's waste takes up in any repository. But this overlooks the hundreds of millions spent on research and development - a huge hidden subsidy. Plus, waste disposal and decommissioning will only have to be paid for after operating companies have made their money and perhaps even left the industry. Governments have taken liabilities off the nuclear private sector before - and the Energy Act 2004 allows the NDA to do so again if nuclear companies are unable to meet their obligations. Companies could direct profits to shareholders leaving the taxpayer to pick up the bill. British Energy passed on its £5.3bn liabilities bill to the taxpayer. (15)

Finally, Richard Noble mentions catastrophic insurance exposure as one uncertainty which has yet to be fully resolved – what happens if an operator is unable to obtain the insurance required? No insurance giant is prepared to insure against a Chernobyl-scale accident, so nuclear power, already enjoys a very large subsidy because it is required to pay only a small fraction of the cost of insuring against a catastrophic accident. If the Government is serious in saying that there would be no subsidies for nuclear power, then it should require the nuclear industry to pay the full cost of insuring against nuclear disasters, without any limitations on liabilities.

Richard Noble says as long as the key uncertainties are addressed the financing for new reactors will follow, and the Government is clearly attempting to resolve the uncertainties.

Whatever happens there is unlikely to be a rush of orders for new reactors largely because the construction industry will be unable to handle an ambitious programme without becoming overstretched and adding to the strains on an industry already chronically short of civil engineers and structural specialists. Global nuclear reactor fabrication capacity will be a limiting factor too. China has plans for 88 out of the 223 new reactor proposals around the globe. This huge programme will corner an enormous slice of industry capacity and resources, with the result that the UK may suffer ordering delays. (16) Fluor's senior vice president for nuclear operations says the UK needs to invest in manufacturing capacity. (17) A lack of skilled labour could hamper plans for new reactors. (18) British Energy warns about choke points, when skills are in short supply, such as at the height of construction for the 2012 Olympics. (19)

(1) Platts 21st Sept 2007 <http://www.platts.com/Nuclear/News/8268551.xml>

British Energy Press Release 20th September 2007 <http://www.british-energy.com/article.php?article=201>

(2) International Herald Tribune 31st July 2007 <http://www.ihf.com/articles/2007/07/31/business/nuke.php>

(3) Telegraph 3rd Oct 2007 <http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2007/10/03/nbrown503.xml>

(4) FT 25th Sept 2007 <http://www.ft.com/cms/s/0/0d409f0c-6aff-11dc-9410-0000779fd2ac.html>

Scientific American 26th Sept 2007

<http://www.sciam.com/article.cfm?articleId=43D0C499-E7F2-99DF-30F52701AD131FD0&chanId=sa003>

- (5) Washington Post 25th Sept 2007
<http://www.washingtonpost.com/wp-dyn/content/article/2007/09/24/AR2007092400839.html>
 Atomic Renaissance, The Economist 8th September 2007,
http://www.economist.com/science/displaystory.cfm?story_id=9762843
- (6) Platts Nuclear News Flashes 25th Sept 2007
- (7) Christian Science Monitor 28th Sept 2007 <http://www.csmonitor.com/2007/0928/p01s05-usgn.html>
- (8) Reuters 21st June 2007 <http://uk.reuters.com/article/topNews/idUKL2179895320070621?rpc=401>
- (9) Reuters 11th June 2007 <http://uk.reuters.com/article/domesticNews/idUKL1113886120070611?rpc=401>
 Poyry Energy Consulting Press Release 11th June 2007.
http://www.ilexenergy.com/pages/White_Paper_PR_11_06_2007_v1_0.pdf
- (10) "Investing in Electricity Generation: the role of costs, incentives and risks". UKERC, June 2007.
<http://www.ukerc.ac.uk/ResearchProgrammes/TechnologyandPolicyAssessment/TPAInvestignInPower.aspx>
- (11) Pearl Marshall, UK Industry mulls new reactors, Nucleonics Week, Vol. 48, No. 26, June 28, 2007
- (12) From end to beginning, Nuclear Engineering International, August 2007
<http://www.neimagazine.com/story.asp?sectionCode=76&storyCode=2046213>
- (13) Hansard, 21 June: Column 2064W
- (14) FT 20th August 2007 <http://www.ft.com/cms/s/0/fb8e6cb0-4e86-11dc-85e7-0000779fd2ac.html>
- (15) Guardian website 21st August 2007
http://commentisfree.guardian.co.uk/john_sauven/2007/08/waste_not_want_not.html
- (16) Telegraph 27th September 2007.
<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2007/09/27/cnbenergy27.xml>
- (17) Telegraph 7th June 2007.
<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2007/06/07/cxbloom107.xml>
- (18) Personnel Today 6th June 2007
<http://www.personneltoday.com/Articles/2007/06/06/40886/prospect-union-claims-skills-shortages-could-hinder-governments-nuclear-reliant-energy-policy.html>
- (19) Reuters 6th June 2007. <http://uk.reuters.com/article/businessNews/idUKL0614222120070606?feedType=RSS>

2. UK hotchpotch of policies will fail.

UK utilities are preparing to launch another dash for gas according to investment analysts UBS. The UK has to replace 13GW of electricity capacity by 2015, and the nuclear industry has no hope of opening new reactors by then. New gas generation tends to be waved quickly through the planning process and is relatively cheap to build. UBS believe 70% of the 13GW of capacity required will be supplied by gas. (1) Poyry Energy Consulting agrees with UBS that, because much of the new capacity required will be needed before 2020, utilities will most likely build new gas-fired generation. (2)

The Energy White Paper set out plans to reduce the UK's reliance on gas imports in 2020 from 80% to 60%, but industry analysts are sceptical about whether this can be achieved. (3) Even EDF Energy, the electricity supplier most enthusiastic about investing in new reactors, expects to build two large gas-fired stations and only one nuclear plant by 2020. It is likely to close two coal-fired stations over the next decade because they will become uneconomic under EU emissions regulations. That will lose EDF around 4,000MW which it envisages replacing with, two gas, one nuclear, and around 1,000MW of renewables, mostly wind. EDF would like four new reactors, opening one every two years after the first one, which it plans to open around the end of 2017. (4)

An Oxford University task force, chaired by Lord Patten of Barnes, complains that the government has no coherent strategy for replacing one-third of UK electricity generation. The report says policy is a hotchpotch of measures unlikely to deliver the government's vision on climate change, energy security and fuel poverty. Its equivocation is deterring necessary policy commitments and investments in renewables and carbon-neutral technologies. Britain's energy policy just doesn't stack up. The study warns that Britain is not doing enough to prepare for a future without large-scale rebuilding of nuclear power plants. The task force says if there isn't going to be a new large nuclear programme, then there needs to be large-scale investment in alternative low-carbon technologies. But the report warns: "Current UK performance in energy investment is slow, cautious and out of step with the urgency of the problem." (5)

(1) Power giant race to fill energy gap, by Sam Fleming, Daily Mail 30th May 2007.

- (2) Reuters 11th June 2007 <http://uk.reuters.com/article/domesticNews/idUKL1113886120070611?rpc=401>
(3) FT 11th June 2007 <http://www.ft.com/cms/s/e00a9276-17b7-11dc-86d1-000b5df10621.html>
(4) FT 5th June 2007 <http://www.ft.com/cms/s/bce825ec-1302-11dc-a475-000b5df10621.html>
(5) Guardian 4th June 2007, <http://business.guardian.co.uk/story/0,,2094616,00.html>
Oxford University Press Release 4th June 2007 <http://www.admin.ox.ac.uk/po/070604.shtml>
Energy Politics and Poverty, Oxford University, June 2007.
http://www.globaleconomicgovernance.org/docs/EnergyPoliticsandPoverty_lr2.pdf

3. A catastrophe we must not repeat

The construction industry's performance in completing the earlier generation of nuclear plant in terms of time and budget was woeful. This time round, the nuclear lobby argues, the learning curve will not be so steep because nuclear technology is more settled and experience has provided valuable lessons.

Throughout its fifty year history, Britain's nuclear industry has consistently failed to deliver on its promises. Now, less than five years after the financial collapse of British Energy, the public, parliament, and the financial markets are being asked once again to believe that a new generation of nuclear power stations can produce electricity safely without government subsidy. And once again, there is good reason to believe that the industry's predictions are as spurious as in previous decades. A new Corporate Watch report, *Broken Promises*, gives an overview of the UK's nuclear industry and its history. This is essential in evaluating proposals for a new generation of nuclear power stations.

Authors Olaf Bayer and Chris Grimshaw conclude that the British nuclear industry and its allies show no sign of having learnt anything from the hugely expensive errors of its past. We can be quite certain that if a new reactors are commissioned, budgets will mushroom and construction schedules will lengthen, and future generations will inherit yet more of the lethal by-products of the technology.

Massive time and budget overruns, poor labour relations, and unexpected engineering and design problems were recurrent themes in nuclear power station construction in the UK. The first two Magnox plants, Bradwell and Berkeley, were completed over a year late. The final one – Wylfa - was three years late. This dismal pattern deteriorated with the AGR power stations, none of which were completed on time or budget. Dungeness B the first AGR plant to be ordered in 1965, and at the time expected to be operational in 1970/1971, did not produce commercial energy until 1989, and exceeded its budget by 400%. Problems persisted throughout the AGR building programme. For example Heysham A was 13 years late and cost almost double its original budget. Even the final two, Torness and Heysham B, were both over a year late. Torness was estimated to be 15% over budget. The cost of Sizewell B was estimated to be £2.01 billion but, by the time of its completion, costs had risen by almost 50% to £2.98 billion. As well as being late and over budget, the majority of the UK's nuclear stations failed to perform to their designed output. (1)

For those who say the nuclear industry has put its past problems behind it, Corporate Watch highlights the problems of the reactor being built at Olkiluoto in Finland. Construction began in early 2005, but by spring 2006, the project was already delayed by around a year, and is now around two years late. Flawed welds for the reactor's steel liner, unusable water- coolant pipes and suspect concrete in the foundations have all been blamed. If Finland's experience is any guide, the ``nuclear renaissance" may be short-lived. (2) The plant is estimated to be 50% over budget and taking 50% longer than planned. (3)

A new report published by Greenpeace reveals that problems are not confined to Finland. Country after country has seen nuclear construction programmes go considerably over budget. The nuclear industry, despite assertions to the contrary, is facing spiralling costs, construction delays, safety failings and falling global demand for its technology. In India, for example, completion costs for the last ten reactors have been 300% over budget. The World Energy Council says construction times have risen from 66 months in the mid-1970s to 116 months - nearly ten years - for completions between 1995 and 2000. The new generation of reactors being proposed for Europe and elsewhere are unproven, leading to more potential delays. (4)

(1) Olaf Bayer and Chris Grimshaw, *Broken Promises: Why the nuclear industry won't deliver*, Corporate Watch, July 2007 <http://www.corporatewatch.org.uk/?lid=2968>

- (2) Bloomberg 5th Sept 2007 <http://www.bloomberg.com/apps/news?pid=20601109&sid=aFh1ySJ.IYQc&refer=news>
- (3) Forbes 28th Sept 2007 <http://www.forbes.com/markets/feeds/afx/2007/09/28/afx4165822.html>
- (4) The Economics of Nuclear Power, by P. Bradford, A. Froggatt, D. Milborrow and S. Thomas, Greenpeace, May 2007. http://www.greenpeace.org.uk/files/pdfs/nuclear/nuclear_economics_report.pdf
- Guardian 3rd May 2007 <http://business.guardian.co.uk/story/0,,2070918,00.html>

4. Nuclear waste policy “incoherent and opaque”

The Westminster Government launched its consultation on proposals for the way in which a site will be chosen for a nuclear waste repository (1) despite calls for a delay from the House of Lords Science and Technology Committee, which branded the institutional framework "incoherent and opaque". (2) And in an unprecedented move the Scottish Government refused to endorse the consultation process saying it ruled out allowing deep disposal in Scotland. (3)

The, now defunct, Committee on Radioactive Waste Management (CoRWM) recommended the establishment of a body to independently oversee the policy implementation process, but the Government has only committed to a reconstituted CoRWM as an advisory body. Members of CoRWM have expressed "*substantial misgivings*" about these plans. (4) Now the House of Lords Science and Technology Committee has also been severely critical of the failure to set up an independent oversight body. The Lords said the consultation on nuclear waste management should be postponed until an independent oversight body had been established. (5)

The Lords also complained that the Government were moving ahead to site selection with “unseemly haste”. In an earlier report on radioactive waste management in 1999, the Lords called for "steady and measured" progress, but its new report said: "Instead, we have had years of procrastination followed by what now appears to be unseemly haste. This is not the way to inspire public confidence."

The Scottish Cabinet Secretary for rural affairs and the environment, Richard Lochhead, recognised that dealing with legacy waste is a significant challenge but said: "The Scottish government does not accept that geological disposal is the right way forward. This is a matter of principle for us and I have no doubt that public opinion in Scotland supports our view." It does, however, support long-term research on waste management and interim storage above ground, so the Scottish Government will be involved with the reconstituted CoRWM currently being established. (6)

Writing in *The Scotsman*, Gordon Mackerron, chair of the defunct CoRWM, accused Scottish Ministers of putting the Committee's whole package of recommendations at risk. (7) He stressed the need to deal with existing waste and warned against cherry picking from CoRWM's “interdependent and inseparable package of measures” lest the whole ball of string unravels, setting us back to where we were before CoRWM was formed. Other members of CoRWM, however, felt it was the UK Government that was cherry picking by ignoring most of CoRWM's recommendations in particular those concerning the need for further research. Former CoRWM member, Pete Wilkinson, accused the government of ignoring the committee's advice: it has done little to address the vital prerequisites to deep geological disposal recommended by CoRWM, in particular intensified research to address uncertainties about storage and disposal, and a security-led review of storage. (8)

Former Friends of the Earth and Nirex researcher, Dr Rachel Western, goes even further on this point arguing that CoRWM's call for research to “reduce uncertainty” is wrong. A genuine scientific programme would be concerned with evaluating whether a disposal programme can be implemented safely – not ‘reducing uncertainties’ which sounds very much like the outcome of the research is being prejudged. She asks how can local communities can be expected to volunteer when there are so many unknowns such as the concentration of radioactivity in the inevitable leaks, and the rate that the leaks will enter the water supply? (9)

Storage has its own significant problems but represents the least worst option as it allows, rather than removes, choice for future generations, who should not be subjected to a potential long-term radiological risk

simply for us to justify a mistaken, misguided and costly solution to climate change and energy security. Storage of waste - possibly for up to 100 years or longer until alternative management solutions are developed - must be subject to a thorough, publicly accessible, national review by security experts. Nothing approaching this has so far been proposed. Gordon MacKerron has also highlighted the lack of any visible progress on the research the committee recommended. (10)

The consultation is not asking communities to express an interest in hosting a nuclear waste dump, that will come later. Rather it is about how to go about calling for expressions of interest from communities, and how a geological disposal facility should be developed. It is about the process. The Government says it anticipates that, in the event that there were new nuclear power stations, waste and spent fuel from those stations could be accommodated in the same geological disposal facility – even though this might increase the total radioactivity by a factor of nearly three. (11) Communities on any shortlist of sites could expect generous "community benefit packages", described by opponents of the waste facility as "bribes".

The Guardian described West Cumbria as the favourite to host the facility (12), prompting Chris McDonald, the lead inspector of the 1995-96 public inquiry into the proposed nuclear waste facility near Sellafield, to write highlighting evidence from the Inquiry showing the safety case was at best marginal. (13) Investigations should be moved elsewhere, he said.

Nuclear Engineering International magazine says it is hard to see how the mysterious demise of Nirex has simplified the repository programme. The irony of a situation in which the Government has launched a consultation on nuclear waste disposal with a lot of talk about openness, at the same time as incorporating Nirex into the NDA in rather a "ham-fisted" and secretive way has not been lost on the magazine. It leaves the process open to legal challenges, and a real danger we will see a "re-run of the last repository failure". The magazine says CoRWM points out that the trust it has built up is fragile, and it is "not persuaded" that the re-vamped CoRWM will ensure a continuation of public and stakeholder trust. This situation in which trust is draining away is exacerbated by the fact that there are no proposed changes to NDA's remit, meaning it has no clear statutory duty for the long-term management of radioactive waste. (14)

Meanwhile Greenpeace has warned that communities thinking of bidding to host a nuclear waste dump could be left financially ruined despite the promise of huge Government subsidies. Winning the bidding competition could end up being a poisoned chalice. Apart from the obvious environmental dangers of hosting radioactive waste civic leaders should think about the long-term economic effects of their area being essentially marketed as a nuclear dumping ground. The financial incentives need to be balanced against any detrimental impact on other investments. (15) The board of Highlands and Islands Enterprise (HIE), has said a nuclear waste repository in Caithness would harm efforts to regenerate the economy after the rundown of Dounreay. (16)

(1) DEFRA Press Release 25th June 2007

<http://www.gnn.gov.uk/Content/Detail.asp?ReleaseID=294304&NewsAreaID=2>

(2) Radioactive Waste Management: An Update, House of Lords Science and Technology Committee, June 2007.

<http://www.publications.parliament.uk/pa/ld200607/ldselect/ldsctech/109/109.pdf>

Sunday Herald 3rd June 2007

http://www.sundayherald.com/news/heraldnews/display.var.1443935.0.concern_over_incoherent_nuclear_waste_disposal_plan.php

RobEdwards.com 3rd June 2007

With added links, an extra quote, and a copy of the report available to download:

http://www.robedwards.com/2007/06/concern_over_in.html

(3) Nuclear Engineering International 25th June 2007

<http://www.neimagazine.com/story.asp?sectioncode=132&storyCode=2045263>

(4) Sunday Herald 10th December 2006. http://www.robedwards.com/2006/12/conflict_of_int.html

(5) BBC 2nd June 2007 http://news.bbc.co.uk/1/hi/uk_politics/6715137.stm

(6) Managing Radioactive Waste Safely: A Framework for Implementing Geological Disposal, DEFRA, 25th June 2007. <http://www.defra.gov.uk/corporate/consult/radwaste-framework/consultation.pdf>

(7) Scotsman 30th June 2007 <http://thescotsman.scotsman.com/opinion.cfm?id=1021622007>

(8) Guardian 12th September 2007, <http://www.guardian.co.uk/nuclear/article/0,,2166840.00.html>

(9) Radioactive Waste Policy Briefing No.15, Nuclear Free Local Authorities.

<http://www.nuclearpolicy.info/docs/radwaste/RWB15.pdf>

(10) Future R&D Needs, by Gordon MacKerron, CoRWM, June 2007.

<http://www.corwm.org.uk/pdf/2209%20-%20Future%20RD%20needs.pdf>

(11) Scotsman 26th June 2007 <http://thescotsmen.scotsmen.com/politics.cfm?id=994422007>

(12) Guardian 25th June 2007 http://www.guardian.co.uk/uk_news/story/0,2111332,00.html

(13) Guardian letters 28th June 2007 <http://www.guardian.co.uk/letters/story/0,2113027,00.html>

(14) Corrina Thomson, Who shot the sheriff? *Nuclear Engineering International*, July 2007.

(15) Newcastle Sunday Sun 1st July 2007

http://icnewcastle.icnetwork.co.uk/sundaysun/news/tm_headline=nuclear-dump-fallout-fears%26method=full%26objectid=19388403%26siteid=50081-name_page.html

(16) Scotsman 16th May 2007 <http://thescotsmen.scotsmen.com/scotland.cfm?id=758462007>

5. Consultation sham.

"We have made the decision to continue with nuclear power," (1) said Gordon Brown, at his first Prime Minister's Question (PMQ) Time on 4th July 2007. With those ten words, he managed to break the law, sabotage an ongoing public consultation and do a U-turn on his promise to listen to the people. He was meant to be abiding by a high court ruling that says the government can't legally make a decision on whether to build new nuclear power stations before a proper public consultation has been carried out, and made the new consultation look as much of a sham as the last one; the government already seems to have made up its mind. (2)

Greenpeace lawyers demanded the Prime Minister "immediately and unreservedly withdraw the government's decision to support the building of a new generation of nuclear power stations". (3) Civil servants were reported to be "having kittens". (4) At PMQs on 11th July, Jamie Reed MP, former BNFL press officer, asked a planted question. Gordon Brown looked down and read from a statement, saying he'd only decide about new reactors after the consultation. (5)

Britain's leading environmental groups withdrew from the consultation just prior to 8th September when deliberative consultation workshops, organised by Opinion Leader Research (OLR), were held in eight cities around the UK with 1,100 member of the public who were asked to assess the case for and against nuclear power and then take a vote. The environment groups said the government had failed to fairly reflect the arguments presented at the meetings, and was distorting the evidence. (6)

Friends of the Earth's Director, Tony Juniper called the consultation "deeply flawed" and said "it is clear that the Government has essentially made up its mind ... we are not prepared to take part in this latest Government farce". (7) The groups published a dossier accusing the government of "conducting a public relations stitch-up". It revealed that: the government had rushed through the consultation in half the time recommended by the Sustainable Development Commission; consultation materials provided for the public were misleading, inaccurate and biased towards nuclear power - full of pro-nuclear opinion masquerading as fact; and repeated requests from non-governmental organisations for updates from the government about the development of public materials for the consultation were ignored. (8)

Independently, 20 senior academics say the consultations were deliberately skewed by linking nuclear to fears about climate change - because the government knew past research had shown it's the only way to get people to accept nuclear, albeit reluctantly. And they say the participants were misled. An inconvenient truth about nuclear - that it can only make a small contribution to reducing the UK's overall CO2 emissions - was buried. (9) Paul Dorfman, senior research fellow at the National Centre for Involvement at the University of Warwick, said the exercise was designed to come up with a popular mandate to proceed with nuclear power. The information given to the public was biased and incomplete, casting fresh doubt on whether the government has followed a court ruling to present both sides of the argument. (10) One participant said it quickly became clear the intention was to provide very limited, biased information in order to lead the participants to a predetermined conclusion. (11)

Greenpeace made a formal complaint to the Market Research Standards Council about numerous breaches of the body's code of conduct by Opinion Leader Research at the deliberative workshops (12) and is

considering further legal action. Greenpeace lawyers have written to the Government, calling its consultation techniques “a complete charade”. (13)

Unsurprisingly, results from the deliberative exercise suggested tentative public support for the Government’s plans. 44% agreed that it would be in the public interest to give energy companies the option of investing in new nuclear power stations. 37% disagreed. 18% neither agreed nor disagreed while 1% didn't know. But 83% of people said they were either concerned or very concerned about safety and security issues associated with nuclear energy, and 90% were very concerned or quite concerned about creating new nuclear waste. (14) The FT described the results as indicating that serious misgivings about nuclear power remain. (15)

Meanwhile the Prime Minister appeared, yet again to pre-judge the outcome of the consultation when he told the Labour Party Conference he wanted the UK to become a “world leader in energy and the environment, from nuclear to renewables.” (16)

See Greenpeace Video “Another Bad Idea Sponsored By the UK Government, Oct 2007”

<http://www.greenpeace.org.uk/blog/about/video-another-bad-idea-sponsored-by-the-uk-government-20071003>

(1) Hansard 4th July 2007, Cmn 955

<http://www.publications.parliament.uk/pa/cm200607/cmhansrd/cm070704/debtext/70704-0003.htm>

(2) Greenpeace UK website 6th July 2007

<http://www.greenpeace.org.uk/blog/nuclear/brown-lets-the-nuclear-cat-out-of-the-bag-20070706>

(3) Letter from Greenpeace lawyers to Gordon Brown dated 5th July 2007

<http://www.greenpeace.org.uk/files/pdfs/nuclear/gplettertobrown050707.pdf>

Greenpeace UK Press Release 6th July 2007

<http://www.greenpeace.org.uk/media/press-releases/pm-sabotages-public-nuclear-consultation-20070706>

(4) Guardian 11th July 2007 <http://society.guardian.co.uk/societyguardian/story/0,,2122843,00.html>

(5) Hansard 11th July 2007, Cmn 1444

<http://www.publications.parliament.uk/pa/cm200607/cmhansrd/cm070711/debtext/70711-0003.htm>

(6) Guardian 7th Sept 2007

<http://www.guardian.co.uk/environment/2007/sep/07/nuclearindustry.nuclearpower>

(7) Friends of the Earth Press Release 7th Sept 2007

http://www.foe.co.uk/resource/press_releases/friends_of_the_earth_pulls_07092007.html

(8) Greenpeace 7th Sept 2007

<http://www.greenpeace.org.uk/blog/climate/what-is-the-government-hiding-about-nuclear-power-20070907>

(9) Channel 4 News 19th Sept 2007

<http://www.channel4.com/news/articles/society/environment/spinning+a+nuclear+consultation/821457>

(10) Guardian 20th Sept 2007

<http://education.guardian.co.uk/higher/news/story/0,,2173018,00.html>

Greenpeace website 19th Sept 2007

<http://www.greenpeace.org.uk/media/press-releases/browns-pollsters-exposed-for-fixing-public-nuclear-consultation-20070919>

(11) Greenpeace 12th Sept 2007

<http://www.greenpeace.org.uk/blog/climate/what-happened-at-the-governments-nuclear-consultation-the-inside-story-20071112>

(12) Greenpeace UK website 19th Sept 2007

<http://www.greenpeace.org.uk/climate/greenpeace-formal-complaint-to-mrsc-over-nuclear-power-consultation>

Research 21st Sept 2007 http://www.research-live.com/news_story.aspx?pageid=30&r=y&newsid=3712

(13) The Lawyer 21st Sept 2007

<http://www.thelawyer.com/cgi-bin/item.cgi?id=128905&d=122&h=24&f=46>

FT 8th September 2007 <http://www.ft.com/cms/s/0/c6131afe-5da4-11dc-8d22-0000779fd2ac.html>

(14) GNN 13th Sept 2007 <http://www.gnn.gov.uk/Content/Detail.asp?ReleaseID=314428&NewsAreaID=2>

(15) FT 10th Sept 2007 http://www.ft.com/cms/s/95541360-5f29-11dc-837c-0000779fd2ac.Authorised=false.html?_i_location=http%3A%2F%2Fwww.ft.com%2Fcms%2Fs%2F95541360-5f29-11dc-837c-0000779fd2ac.html&_i_referer=http%3A%2F%2Fsearch.ft.com%2Fsearch%3Fpage%3D4

http://www.ft.com/cms/s/95541360-5f29-11dc-837c-0000779fd2ac.Authorised=false.html?_i_location=http%3A%2F%2Fwww.ft.com%2Fcms%2Fs%2F95541360-5f29-11dc-837c-0000779fd2ac.html&_i_referer=http%3A%2F%2Fsearch.ft.com%2Fsearch%3Fpage%3D4

(16) FT 25th Sept 2007

http://www.ft.com/cms/s/0/ef9fd942-6ad9-11dc-9410-0000779fd2ac.dwp_uuid=ce240942-6a88-11dc-9410-0000779fd2ac.html

6. Generic Nuclear Design Assessments

The new Department for Business, Enterprise and Regulatory Reform (DBERR), which has replaced the DTI, approved four applications for the opening phase of the generic design assessment (GDA) for new nuclear reactors. The designs eligible to go into the first stage of the pre-licensing process, were put forward by Atomic Energy Canada Limited (AECL), Areva, GE-Hitachi and Toshiba -Westinghouse. If successful in phase one, which includes an assessment of each design's safety case, a design may be able to progress to phase two of the generic design assessment to be assessed in more detail. The DBERR added that it is likely that only three designs will make it to phase two due to resource constraints of the regulators. (1) *The Daily Telegraph* predicted the Canadian Advanced Candu reactor (ACR) would be the one dropped. (2)

The GDA system has been devised by the nuclear regulators (Health & Safety Executive (HSE), the Environment Agency and the Scottish Environment Protection Agency) for new reactors. In January 2007, a suite of guidance material on the generic design assessment of new nuclear power station designs was published. (3) The first stage began with an invitation to vendors to apply by 22nd June to have their designs assessed. (4) The initial design assessment should be completed by early 2008, but the whole process is likely to take around three and a half years. In order that the process is open and transparent, and to encourage public participation, HSE has asked applicants to put as much information about their plans into the public domain as possible. Public comments on the safety case(s) will be invited, and subsequently used by HSE to inform its regulatory decisions. So far EDF and Areva have launched a joint website detailing their submissions on the EPR reactor. (5)

At the end of this process, HSE will issue a short statement on the acceptability, in principle, of a licence application. This could then be followed by a formal site licence application, which would be considered by HSE, centred on site-specific issues.

The nuclear industry has welcomed GDA because it will limit the need to examine environmental and safety issues during the planning inquiry processes. This reduces regulatory risk and provides a route to shorter and more predictable site-specific public inquiries with limited public input. (6)

Meanwhile, Prospect, the Trade Union representing 15,000 scientists, engineers and inspectors in the nuclear industry, has warned that building new reactors and replacing the Trident nuclear submarines may be threatened by a shortage of nuclear inspectors. (7)

(1) Forbes 5th July 2007 <http://www.forbes.com/afxnews/limited/feeds/afx/2007/07/05/afx3886476.html>

Dept for Business, Enterprise & Regulatory Reform Press Release 5th July 2007

<http://www.gnn.gov.uk/Content/Detail.asp?ReleaseID=297087&NewsAreaID=2>

(2) Daily Telegraph 9th July 2007

<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2007/07/09/cnatom109.xml>

(3) Guidance on Generic Design Assessment <http://www.hse.gov.uk/nuclear/reactors/guidance.htm>

(4) Generic Design Assessment: Latest Developments. HSE May 2007

<http://www.hse.gov.uk/nuclear/reactors/index.htm>

(5) <http://www.epr-reactor.co.uk/scripts/ssmod/publigen/content/templates/Show.asp?P=57&L=EN>

(6) Energy Business Review Online 19th June 2007

http://www.energy-business-review.com/article_news.asp?guid=FB403ED6-A873-4AA8-84F5-8FDA1B7BBAF0

(7) PA 16th Sept 2007 <http://ukpress.google.com/article/ALeqM5iEMX0hbJ7amoWTFxchEUTZd0jsoQ>

7. Nuclear Siting

The Government has indicated that it is "more likely than not" that existing nuclear sites will house the next generation of nuclear power plants, despite MPs' fears that rising sea levels means the use of coastal sites is "asking for trouble." During Trade and Industry questions a number of MPs raised concerns over the threat to coastal sites. Labour's Rob Marris (Wolverhampton S.W.) asked Alastair Darling to look at the appropriateness of building on coastal sites. "It is likely that by 2050 sea levels will have risen by 40 centimetres at least and that storm waves will get higher," said Mr Marris. Darling replied that "...it is more

likely than not that any new build would be on existing sites but an assessment would have to be made as to whether or not such an existing sites would be suitable for new building in the future.” (1)

Meanwhile Copeland’s MP Jamie Reed has categorically dismissed the Jackson Consultancy assertion that it is not feasible to put a new reactor at Sellafield because of the need to erect new power lines over the Lake District National Park. But Mr Reed says “This would be an engineering problem requiring an engineering solution and it is not insurmountable.” The MP revealed he was already in discussions with companies including electricity utilities who might be keen to finance new reactors at Sellafield. (2)

In an article for Regeneration and Renewal, Ian Jackson says the main difference between siting decisions taken today compared with the past is that the electricity industry is now privately run. This means that operators will want their reactors close to markets, with good grid connections and plentiful supplies of cooling water. An experienced labour force with a measure of support in the local community would also be a key factor. (3)

(1) East Anglian Daily Times 7th June 2007

<http://www.eadt.co.uk/content/eadt/politics/story.aspx?brand=EADOnline&category=Politics&tBrand=EADOnline&category=zpolitics&itemid=IPED07%20Jun%202007%2013%3A03%3A27%3A887>

(2) Whitehaven News 31st May 2007 <http://www.whitehaven-news.co.uk/news/viewarticle.aspx?id=504039>

(3) Regeneration and Renewal, 8th June 2007.

8. Justification and Strategic Siting Assessment.

As well as the main government consultation on the future of nuclear power (1), there were also consultations on the Justification process, Strategic Siting Assessment and Strategic Environmental Assessment. (2) The Government thinks it is prudent to start working on this “facilitative action” now – even though theoretically it hasn’t decided to definitely go-ahead with new nuclear stations – so no time is wasted. The deadline for responses was, as with the main consultation 10th October.

Justification is described as “a high-level assessment to determine the benefits and detriments associated with a particular class or type of nuclear practice”. A new practice is deemed to be justified if the benefits of its introduction outweigh the health detriment. The assessment is generic rather than site specific. In other words, applicants seeking justification for new nuclear power station technologies will need to demonstrate that any health detriment is offset by the benefits associated with the practice. Benefits can cover economic, social or other benefits.

The UK is also required under article 37 of the Euratom Treaty to provide the European Commission with information relating to any plan for the disposal of radioactive waste to make it possible to determine whether the implementation of such a plan is liable to result in the radioactive contamination of another Member State.

The Government expects to publish guidance on the Justification Process for applicants in early 2008. At the same time it will also call for applications. It expects to be able to publish a decision in early 2009. If the Government receives applications for a number of different nuclear reactor technologies at the same time, it is expected that these will be dealt with together with the assessments set out in the same draft decision document. (3)

The Strategic Siting Assessment (SSA) will determine the suitability of potential sites for new reactors. Consideration of the environmental effects of the construction, operation and decommissioning of a nuclear power station would form a vital part of decisions on siting. The European Directive on Strategic Environmental Assessment (SEA) (4) also requires such factors to be taken into account in developing plans or programmes which will have consequences for the environment. The Government consultation is about the process to be used in carrying out the SSA. The SSA will conclude with the publication of a Policy Statement on siting, setting out detailed criteria together with a list of any proposed sites which have been assessed as meeting the criteria. Such a list would not preclude others from being put forward in future. The results of the SSA will inform a subsequent Governmental policy statement on siting for new nuclear power

stations, as part of a potential National Policy Statement (NPS) on new nuclear power stations. The SSA policy statement is expected to be published around mid-2009, but a draft list of nominated sites is likely to be published for consultation on in the early part of 2009.

(1) The Future of Nuclear Power: The role of nuclear power in a low carbon UK economy, DTI May 2007

http://nuclearpower2007.direct.gov.uk/docs/FINAL_20618DTINuclearReport_070523.pdf

(2) The Future of Nuclear Power: Consultation on the proposed process for justification and strategic siting assessment, DTI, May 2007

http://nuclearpower2007.direct.gov.uk/docs/FINAL_20618DTI_TechnicalConsultation_070523.pdf

(3) See Justification Process for New Nuclear Power Stations in the UK: A Discussion of the Basis for Considering Together Different Candidate Reactor Systems, Nexia Solutions, March 2007

<http://www.dti.gov.uk/files/file39200.pdf>

(4) Directive 2001/42/EC of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (O.J. L197, 21.7.2001, p.30)

9. Plutonium stockpiles

On 2nd July the NDA published a summary of the "Uranium and Plutonium: Macro-Economic Study". (1) The study provides a wide-ranging analysis of options for the UK's embarrassing stocks of uranium and weapons-useable plutonium, and sets out the financial, socio-economic and environmental impacts of each option. The NDA says it will take these findings into account in its discussion with Government.

The report, written by Peter Wooders of ERM and Gregg Butler and Grace McGlynn, formerly BNFL and now Integrated Decision Management Ltd (IDM), says the UK has enough uranium and plutonium stockpiles to fuel three 1000 MWe reactors for their entire 60-year lives or 12GWe of fast reactors for 700 years. (2) Other options include treating the materials as waste and storing them for possible future use.

In terms of discounted costs, the quick disposal option would cost around \$2 billion; Long-term storage would cost around \$0.6 billion, but the cost of quick re-use as fuel would vary from a cost of \$2 billion to an income of \$4 billion. Although it is outside the report's scope to make recommendations, it concludes: The 'waste' option is low-risk and low cost. If the uranium price is low, it could even have the lowest cost of all. The 'store' option is flexible and puts off large capital expenditure for significant periods. The 'use' option could realise significant value from the materials (particularly if the uranium price is high) but is subject to significant downside risks.

Britain's stocks of plutonium are kept in "unacceptable" conditions and pose a severe safety and security risk, according to the Royal Society. Ministers must urgently review the way more than 100 tonnes of plutonium are stored. The Government has ignored previous warnings but now the rise of international terrorism means the UK must find a way to use or dispose of the material. The scientists favour using the material as MoX fuel in new or existing reactors, despite the dangers of transporting the weapons useable material around the country. (3) The *Whitehaven News* speculated that report could boost the prospects for the Sellafield MOX Plant which is under constant review by the NDA because of its poor performance. (4)

(1) NDA News 2nd July 2007 <http://www.nda.gov.uk/news/uranium-plutonium.cfm>

(2) World Nuclear News 4th July 2007

http://www.world-nuclear-news.org/wasteRecycling/UK_considers_uranium_and_plutonium_stockpiles_040607.shtml

(3) Guardian 21st Sept 2007 http://www.guardian.co.uk/uk_news/story/0,2173810,00.html

Royal Society's Report 21st Sept 2007: <http://www.royalsoc.ac.uk/displaypagedoc.asp?id=27169>

Royal Society Press Release 21st Sept 2007: <http://www.royalsoc.ac.uk/news.asp?id=7081>

(4) Whitehaven News 27th Sept 2007

<http://www.whitehaven-news.co.uk/news/viewarticle.aspx?id=546857>

10. Zero-carbon by 2050

The Liberal Democrats became the first Westminster party to back a zero-carbon, nuclear-free Britain, at their Conference in September. Among a wide set of proposals, the party backed eradication of nuclear power stations, green mortgages, building a high speed rail network, charging lorries to use UK roads, and indexing fuel duty to GDP growth. Airport runway capacity would be kept at present levels. (1)

The Liberal Democrats are not the only people thinking along these lines. The Institute for Energy and Environmental Research has produced a roadmap showing how the USA could become carbon and nuclear-free by 2050. (2) "A technological revolution has been brewing in the last few years, so it won't cost an arm and a leg to eliminate both CO₂ emissions and nuclear power," says Dr. Arjun Makhijani, author of the study. "We can solve the problems of oil imports, nuclear proliferation as it is linked to nuclear power, and carbon dioxide emissions simultaneously if we are bold enough."

(1) Independent 18th Sept 2007 <http://news.independent.co.uk/uk/politics/article2973537.ece>
Zero Carbon Britain: Taking a Global Lead, Liberal Democrats 2007.

http://www.libdems.org.uk/media/documents/policies/PP82%20Zero%20Carbon_FINAL.pdf

(2) Carbon-free and Nuclear-free: A Roadmap for U.S. Energy Policy by Arjun Makhijani, IEER 2007.
<http://www.ieer.org/carbonfree/CarbonFreeNuclearFree.pdf>

11. Consultation is dead, long live consultation.

The White Paper "Planning for a Sustainable Future" proposes the production of National Policy Statements ("NPS") which would provide a clear policy framework for nationally significant infrastructure ("NSI"); including nuclear power stations. Developers will be required to consult local authorities, statutory bodies, the public and so on before applying for consent. The Government will establish an independent "infrastructure planning commission" ("IPC") to vet applications and take the decisions on such projects instead of the Secretary of State. But the IPC will be obliged to approve any project if it has "*main aims* (sic) consistent with the relevant national policy statement." (1)

The Nuclear Free Local Authorities argue the essential thrust of the White Paper is to diminish the ability of local authorities and their communities to influence decisions relating to national infrastructure projects in England and Wales. Legal advice to the Nuclear Free Local Authorities is that this provides nuclear station developers with a well-nigh unassailable basis for approval of their projects but by contrast it leaves local authorities and their communities with an extraordinarily narrow and unlikely basis for a refusal i.e. actual illegality. (2) The dominant motive is to clear: the path for development at the cost of local accountability and popular participation. There is widespread opposition to these proposals and real opportunities to prevent their being implemented. Although confined to England and Wales, it is clear that Westminster intends to urge the devolved administrations to introduce similar proposals. (3)

The Government's assertion that the white paper will strengthen local democracy has been described as the 'opposite of the truth' by the Campaign to Protect Rural England (CPRE). The very purpose of the paper is to reduce local control in order to accelerate the consent procedure for major infrastructure projects (MIPs). So, for example, the power of consent for MIPs is transferred from local councils to a new quango, which will be led not by the local development plan but by predetermined national policy, from which it will be able to depart only when bound to by law. CPRE says the new quango could not refuse an application for a new reactor on the grounds, for example, that the government's policy overstates the need for nuclear power. The right of local people to participate fully in the inquiry process, including by giving evidence and cross-examining the developer's witnesses, is replaced by the sop of a right to be consulted by the developer, and an "open floor" soap box to permit them to voice their grievances.

The Civic Trust says the intentions in the planning white paper could not be clearer. It will abolish the requirement to demonstrate a need for major new developments. There will be a presumption in favour of development which will cripple the ability of local communities to have any effective role in the holistic planning of their areas. The white paper places primacy on economic development - it will severely limit

local communities' ability to have any useful say in planning. The Civic Trust says the white paper is "piecemeal, ill-conceived and disjointed. An immediate return to the drawing board is urgently required". (4)

A coalition of environmental and social organisations has been fighting these damaging proposals which it says are the result of the Treasury's determination to rebalance the planning system in favour of business and away from environmental and social concerns. At a time when action on climate change and environmental protection is needed more than ever this rebalancing is a step in the wrong direction. The coalition intends to fight and defeat these proposals over the coming months. (5)

(1) <http://www.communities.gov.uk/index.asp?id=1510503>

(2) Nuclear Free Local Authorities Press Release 6th June 2007.

<http://www.nuclearpolicy.info/news/pr070606.php> (3) [http://www.nuclearpolicy.info/docs/briefings/A178\(NB62\).pdf](http://www.nuclearpolicy.info/docs/briefings/A178(NB62).pdf)

(4) Guardian 5th June 2007 <http://www.guardian.co.uk/letters/story/0,,2095346,00.html>

Planning White Paper: Our concerns, CPRE, May 2007

<http://www.cpre.org.uk/campaigns/planning/planning-system/planning-system-our-concerns>

(5) Coalition Press Release, 21st May 2007

http://www.civictrust.org.uk/news/Planning_white_paper_coalition_response.pdf

12. Nuclear not the answer

Nuclear power couldn't curb climate change without expanding worldwide at the same rate it grew from 1981 to 1990, its busiest decade, and keeping up that rate for 50 years, according to a report compiled by environmentalists, academics and nuclear industry proponents. 10 dumps the size of Yucca Mountain would be needed to store the extra waste generated by such an expansion.

The report concludes that there are critical shortcomings in the current IAEA safeguards system and the international community has not demonstrated that the international enforcement mechanisms are effective. Safeguards are insufficient to detect the timely diversion of significant quantities of plutonium or weapons-grade uranium. The study participants agreed that a primary proliferation concern is the diversion of material from bulk handling facilities such as reprocessing plants, uranium enrichment facilities, or MOX fuel fabrication facilities. Growing stocks of separated plutonium represent a significant proliferation risk. The group agrees that the US Government's Global Nuclear Energy Programme (GNEP) cannot be seen as a programme to reduce the proliferation problem, and may indeed increase proliferation risks. (1)

The Austrian government has published a report called Nuclear Power, Climate Policy and Sustainability. (2) The Austrian Environment Minister introduces the report pointing out that there is a widespread consensus in Austria that nuclear power is too risky and burdens future generations with dangerous waste. He says even overlooking the main drawbacks of nuclear power, a new reactor building programme would come too late to contribute significantly towards the solving climate change. Nuclear power is not even a cheap solution: energy efficiency measures and alternative energies are superior ecologically and economically. Thus nuclear power is not the convincing solution some claim; rather it is no solution at all.

In a chapter on the Kyoto Protocol, Anthony Froggatt concludes that if nuclear energy is to play a non-marginal role in reducing CO₂-emissions, its rate of use would have to be increased to a level which is about an order of magnitude above that experienced in the "golden" decades of nuclear energy, i.e. in the 1970s and 1980s. Through appropriate policies, such as minimum efficiency standards for buildings or appliances, economic growth can be provided without an increase in energy demand. A global increase in the use of nuclear power to reduce CO₂-emissions would bring its own environmental and security problems. The lack of high grade uranium ores would require the deployment of plutonium reactors which would significantly increase the nuclear waste and proliferation problems already associated with the current, relatively limited, nuclear energy programme.

The Oxford Research Group calculates that, for nuclear power to be able to make a reasonable contribution to combating climate change, taking into account the global increase in population and electricity demand, then around 48 reactors would have to begin construction every year between now and 2075. (3) This compares to an average construction rate of 3.4 reactors per year which France managed at the height of its

nuclear boom between 1977 and 1993. (The Nuclear Industry Association says that globally 16.6 reactors were commissioned per year during that period. NIA also calls construction to begin on more than 23 reactors per year – a rate 40% higher than ever achieved before. (4))

ORG argues that worldwide stocks of high-grade uranium are expected to run dangerously low within 25 years so a significant increase in nuclear power will require a new generation of "breeder" reactors. Though this will reduce the need for uranium it will also add immensely to the amount of weapons-useable plutonium in circulation. Whilst the plutonium economy cannot be introduced in time to make any impact on carbon emissions targets for 2050, if decisions are taken now in the UK and elsewhere to go for a nuclear renaissance, we will be on a flawed and dangerously counter-productive energy trajectory. (5)

(1) The full report is online at www.keystone.org/spp/energy07_nuclear.html

MSNBC 15th June 2007

<http://www.msnbc.msn.com/id/19247632/>

(2) Nuclear Power, Climate Policy and Sustainability available in English from:

<http://umwelt.lebensministerium.at/filemanager/download/20562/>

(3) Frank Barnaby and James Kemp, Too hot to handle? The future of civil nuclear power, Oxford Research Group,

June 2007, http://www.oxfordresearchgroup.org.uk/publications/briefing_papers/pdf/toohottotohandle.pdf

(4) Letter from Keith Parker to the Guardian, 7th July 2007. <http://www.guardian.co.uk/letters/story/0,,2120896,00.html>

It is worth noting that the 1,000 new reactors mentioned by NIA would also require a new Yucca Mountain sized nuclear dump to be opened somewhere every three or four years. See

<http://www.no2nuclearpower.org.uk/reviews/review01.php>

(5) Guardian 4th July 2007 <http://www.guardian.co.uk/frontpage/story/0,,2117950,00.html>

13. Plan B

The government is trying to work out how the country will cope if no nuclear power plants are built over the next decade. Energy Minister, Malcolm Wicks said if new evidence or new arguments came up that made the Government think again then it would think again, so it is trying to come up with an alternative "plan B" in case it changes its mind.

Reuters 20th August 2007

<http://uk.reuters.com/article/businessNews/idUKL2014060120070820?rpc=401&>

Public Servant Daily 21st Aug 2007. http://www.publicservant.co.uk/news_story.asp?id=3658