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1. UK Renaissance Delayed

There will be a delay of a minimum of three-months, (1) up to perhaps as much as two years, in new reactor construction in the UK as a result of plans for nuclear safety reviews after the Fukushima accident. According to *the Sunday Times* industry insiders are now factoring a delay of two years or more into EDF Energy’s plans for Hinkley Point C. (2)

The UK Health and Safety Executive said it will not publish its final conclusions on the safety of the Areva EPR and Westinghouse AP1000 reactor designs until after the nuclear safety review investigates the implications of the nuclear accident for the safety of UK reactors. That review, being conducted by Chief Nuclear Inspector Mike Weightman, is not expected to be complete until September. The HSE had been planning to publish its conclusions under the generic design assessment, or GDA, process at the end of June. The HSE said that it would proceed to publish all the outstanding GDA safety issues on the two reactor designs identified by June 30, as well as the reactor vendors’ resolution plans for those issues. (3)

The Institution of Civil Engineers UK vice president Richard Coackley thinks the nuclear new build programme will be delayed by a year. EdF Energy’s attempt to build a power station at Hinkley Point in Somerset has already run into trouble, with two local councils objecting to its proposals earlier this month. Stage two of its public consultation for the plant ended last week with Somerset County Council and Sedgemoor District Council still objecting to parts of the proposal. But a top government

advisor said there was “*no cause for concern*” and the new build programme will go ahead as planned. (4)

Meanwhile, analysts UBS AG say the Fukushima disaster is likely to hurt the nuclear power industry’s credibility more than Chernobyl which: “*affected one reactor in a totalitarian state with no safety culture*”. On the other hand: “*At Fukushima, four reactors have been out of control for weeks -- casting doubt on whether even an advanced economy can master nuclear safety.*” (5)

Some experts believe the Fukushima crisis is more serious than Chernobyl because: “*It’s graver than Chernobyl in that no one can predict how the situation will develop,*” said Atsushi Kasai, a former senior researcher with the Japan Atomic Energy Research Institute. (6)

- (1) Platts 5th April 2011 <http://www.platts.com/RSSFeedDetailedNews/RSSFeed/ElectricPower/8749355>
- (2) Sunday Times 1st May 2011
http://www.thesundaytimes.co.uk/sto/business/energy_and_environment/article615632.ece
- (3) HSE Bulletin 5th April 2011 <http://content.govdelivery.com/bulletins/gd/UKHSE-588c1> See also Guardian 5th April 2011 <http://www.guardian.co.uk/environment/2011/apr/05/uk-nuclear-plan-fukushima?INTCMP=SRCH>
- (4) New Civil Engineer 21st April 2011 <http://www.nce.co.uk/news/energy/fukushima-will-delay-uk-nuclear-by-a-year/8614108.article>
- (5) Bloomberg 4th April 2011 <http://www.bloomberg.com/news/2011-04-04/fukushima-crisis-worse-for-nuclear-power-industry-than-chernobyl-ubs-says.html>
- (6) UPI 25th April 2011 http://www.upi.com/Top_News/World-News/2011/04/25/Health-risks-numerous-near-nuclear-plant/UPI-19741303731040/

2. Is Chris Huhne preparing for his second U-turn on nuclear?

Rowena Mason, writing on *The Telegraph*’s blog, wonders if ministers are smoothing the way for a new official line – that we don’t need nuclear power after all. (1)

The bosses at EDF, Centrica, RWE npower, E.ON and all must be feeling distinctly queasy, she says, after all the time and money they’ve spent on pushing for nuclear power in Britain. They’ve been pretty successful at gaining subsidies for it too – with UK bill payers expected to pay at least £17 more per year by the middle of the decade to encourage the construction programme.

Charles Hendry acknowledged on BBC Radio Four: “*We can meet our objectives without nuclear. It would be more expensive. But safety is our top priority.*” This is a distinct change of tune, after banging on for the last year about how nuclear is needed to keep Britain’s lights on. Also worrying to UK politicians is the impact of greater safety requirements on the cost of building each £5bn nuclear power station. The Government simply cannot ask the UK consumer to bear much more cost on their electricity bills without pushing thousands more into fuel poverty.

So what could the policy-makers in the Department of Energy be scrabbling together as a non-nuclear plan, asks Mason. Nuclear stations currently supply about 18% of the UK’s electricity needs. (2) It would be difficult to replace this with wind turbines, because it is already planned that renewables will be making a third of the UK’s electricity by 2020. The only real alternative lower-carbon option is modern, efficient gas, which is currently attractive due to low prices. Historically, the Conservatives have fretted over leaving Britain so exposed to energy imports, when North Sea reserves are declining. But if nuclear costs rise exponentially and the tide of public opinion turns against new stations, it looks like there would be little other choice than a dash for gas, concludes Mason. Let’s hope that Hendry is reading the report by Poyry for Greenpeace. (3) Pöyry’s ground breaking analysis shows there is an unprecedented opportunity for very large scale combined heat and power (CHP) plants to provide both heat and electricity, allowing us to cut emissions, reduce fuel use, cut costs and provide up to 16GW of new electricity generating capacity to meet UK demand over the coming years.

Charles Hendry also admitted on Radio 4 that the economic context for the government's plans for 10 new nuclear plants had changed as a result of events in Japan, and as such there was a risk that energy firms could rethink nuclear investments. He also reiterated the government's view that a major overhaul of wider energy policy was needed to avoid a potentially serious energy gap in the second half of this decade (which, of course, nuclear could do very little to help). (4)

- (1) Telegraph 11th April 2011 <http://blogs.telegraph.co.uk/finance/rowenamason/100009970/is-chris-huhne-preparing-or-his-second-u-turn-on-nuclear/>
- (2) See Digest of UK Energy Statistics 2010. <http://www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx>
- (3) Securing Power: Potential for CCGT CHP Generation for Industrial Sites in the UK. Greenpeace June 2008. <http://www.greenpeace.org.uk/files/pdfs/climate/securing-power.pdf>
- (4) Business Green 11th April 2011 http://www.businessgreen.com/bg/news/2042375/energy-minister-admits-post-fukushima-nuclear-challenge?WT.rss_f=&WT.rss_a=Energy+minister+admits+to+post-Fukushima+nuclear+%22challenge%22

3. Electricity Market Reform

The government is expected to publish its final plans for electricity market reform in June. *The Sunday Times* described the draft proposals as “a cocktail of big subsidies for nuclear and offshore wind, harsh penalties for coal, and a doubling, at least, of household energy bills ... a return to aggressive state intervention.” (1)

Increasingly, though, there are concerns the government has got its sums badly wrong. The industry has lobbied frantically for changes to the new market structure. “*The ramifications of this will be profound,*” said a senior industry source. “*If we choose to go down this route, the UK will end up with an energy system three to four times more expensive than others and our economy will be rendered uncompetitive, full stop.*”

If industry insiders are right and the Fukushima disaster ultimately leads to a two year delay in the nuclear programme then gas-fired stations will have to be built, says the newspaper, to fill the energy gap expected at the end of this decade.

Ofgem has predicted that, in the worst-case scenario, household energy bills could double to £2,000 a year within a decade, but this figure now looks too low. Extra safety for nuclear plants will add to the predicted £5 billion price tag for each reactor. Ofgem's prediction was based on a world where oil was about \$110 a barrel. Last week it closed at \$128 — analysts at Barclays Capital predict it could hit \$184 by 2020, though new gas finds in America could keep gas prices lower.

To make matters worse, the industry has lost faith in the government. The multi-billion pound investments that companies are being asked to make will be underpinned by subsidies for the more expensive low-carbon technologies. But companies have been unsettled by George Osborne's surprise “windfall” tax on North Sea oil firms in the budget. New investment has been brought to a shuddering halt. The CBI said last week that, “*there is a perception among companies and financial investors that conditions in the UK are less attractive than elsewhere and this is proving a significant barrier*”.

The only company pleased with all the government's proposed reforms is EDF. Rivals argue that the subsidy system, which would top up power prices for low-carbon technologies to a guaranteed level, is tailored to nuclear power at the expense of rival forms. The government's aim of seeing 33GW of offshore wind farms installed by 2020 also seems to have fallen by the wayside. These turbines alone would cost £100 billion. Even with generous subsidies, the government has now quietly acknowledged that this won't happen. According to the market reform consultation documents, it expects to be harvesting 12GW of offshore wind by 2020 — a third of the previous goal.

To fill the breach, the government has placed its faith in gas-fired power stations equipped with carbon capture and storage technology, an experimental process that strips carbon dioxide from power plant exhaust and buries it underground. It plans to finance at least four plants to prove the technology can work on a large scale.

Given that electricity prices will rise whatever we do, and that the Government has begun to accept that we can meet our energy requirements without nuclear, and that the Government is prepared to sanction as The Sunday Times puts it “*a return to aggressive state intervention*”, surely it must now be time to examine why the UK is planning for a doubling or trebling of electricity consumption by 2050 whereas the Germans are planning for a 25% reduction. (2)

- (1) Sunday Times 1st May 2011 http://www.thesundaytimes.co.uk/sto/business/energy_and_environment/article615632.ece
- (2) The Warren Report, February 2011 [http://www.ukace.org/publications/ACE%20Warren%20Report%20\(2011-02\)%20-%20Thirty%20years%20on%20and%20still%20waiting%20for%20an%20answer.pdf](http://www.ukace.org/publications/ACE%20Warren%20Report%20(2011-02)%20-%20Thirty%20years%20on%20and%20still%20waiting%20for%20an%20answer.pdf)

4. Flamanville EPR “very compromised”

French Nuclear Safety Authority (ASN) president Andre-Claude Lacoste has said that he “*could not rule out*” a moratorium on the EPR under construction at Flamanville in Normandy. The reactor has cost over € 5 billion to build and has run into delays and cost over-runs. Mr. Lacoste said the reactor, whose engineering works were led by the French electricity giant EDF was “*very compromised.*” The ASN has put in place several new security rules and regulations on the Flamanville EPR nuclear site which is scheduled to reopen shortly following a partial closure in the wake of a fatal accident in January 2011. As far as France’s second EPR (1,650 MWe) reactor to be built at Penly is concerned, ASN cast doubts on whether the project would ever get off the ground.

The Nuclear Safety Authority also warned the EDF that it needed to “seriously” improve the maintenance of the 58 reactors it runs in France. Mr. Lacoste said an audit of the safety of all reactors on French soil was under way and a report would be available by year-end. Last year EDF discovered “anomalies” affecting dozens of its reactors, including corrosion on parts of the steam generators within its older reactors. (1)

Lacoste suggested Flamanville might need to install diesel generators back up the cliff, or strengthen the protection of spent fuel pools as a result of the Fukushima accident. (2)

The Stop Hinkley campaign expressed concern about the warnings from the French Nuclear Safety Authority, ASN, about the dangers of the Hinkley C reactor design. (3)

- (1) The Hindu 1st April 2011 <http://www.thehindu.com/news/national/article1588891.ece>
- (2) Liberation 1st April 2011 <http://www.liberation.fr/monde/01012329173-il-est-encore-possible-de-faire-des-modifications-a-flamanville>
- (3) Stop Hinkley Press Release 8th April 2011 <http://www.stophinkley.org/PressReleases/pr110408.htm>

5. Weightman Report

The Nuclear Free Local Authorities (NFLA) has written to Mike Weightman (1) to highlight the fact that nuclear regulators from 72 nations meeting in Vienna to review the 1996 Convention on Nuclear Safety decided to hold a special meeting on Fukushima next year to improve safety. “It is understood that the lessons-learned process cannot be completed until sufficient additional information is known and fully analyzed,” according to the statement. (2)

The Convention will hold a special meeting in August 2012 to which will aim to improve nuclear safety and draw lessons from Fukushima. The NFLA calls for all nuclear new-build developments to be halted at least until final conclusions on nuclear safety post-Fukushima can be accurately made.

In its initial submission to the Weightman Inquiry, (3) the NFLA expressed its concern about the speed, length and scope of this inquiry. NFLA urged the Nuclear Installations Inspectorate to include independent engineering specialists in the expert panel considering the failure of the Fukushima reactor cooling systems.

- (1) NFLA letter to Mike Weightman 15th April 2011
http://www.nuclearpolicy.info/docs/consultations/NFLA_Weightman_review_supplementary_note.pdf
- (2) Bloomberg 14th April 2011 <http://www.bloomberg.com/news/2011-04-14/nuclear-regulators-delay-study-of-fukushima-lessons-until-2012.html>
- (3) NFLA Letter to Mike Weightman 14th April 2011
http://www.nuclearpolicy.info/docs/consultations/NFLA_Weightman_review_initial_comments.pdf

6. Sellafield MoX Plant – Mark II

The Government's consultation on the "Management of the UK's plutonium stocks" closes on 10th May. (1) The consultation document sets out three options for long-term plutonium management: reuse as MoX fuel; immobilisation and direct disposal as waste and continued long term storage. The Government says its preliminary view is that the best option is reuse as MOX (Mixed uranium and plutonium oxide fuel). (2)

Cumbria County Council's response has called on the Government to "*consider the case for constructing one or more dedicated MOX burning reactors on available land beside the Sellafield and NuGeneration Ltd sites*". (3)

In May last year the Nuclear Decommissioning Authority (NDA) announced that it had secured contracts with 10 Japanese power companies for the use of the existing Sellafield MoX Plant. But the deal was far from being 'done and dusted' and will be entirely dependent on the installation of new equipment and extensive modifications to the plant, all of which will be paid for by the Japanese. (4)

Sellafield's Thermal Oxide Reprocessing Plant (THORP) secured orders thirty years ago from Japan amounting to 2864 tonnes of spent fuel for reprocessing. From the reprocessing of this fuel, some 12 tonnes of plutonium have been recovered and stockpiled at Sellafield. It was the intention of the Japanese companies to convert all 12 tonnes of plutonium into MOX fuel at SMP.

Now the nuclear crisis in Japan is threatening the carefully choreographed UK Government plan to tackle the world's biggest mountain of plutonium waste stored at Sellafield. There are fears that Japan is about to turn its back on the MoX enterprise. It was hoped that Japanese contracts with Sellafield to make MoX fuel would underpin the economic and political case to tackle Britain's plutonium stockpile with a second multi-billion-pound MoX fabrication plant built at Sellafield. But Japanese power companies have told Sellafield that concerns about Fukushima have forced them to indefinitely postpone a shipment of French-made MoX that would have been transported on British vessels. The postponement is significant because the MoX shipment was not destined for Fukushima, but for the unaffected Hamaoka reactors operated by Chubu Electric, the same company that was supposed to be one of the first customers of the existing Sellafield Mox Plant (SMP). (5)

Bad decisions, poor performance and government subsidies have set the nuclear industry apart from any sector in Britain, except perhaps for banking. The reason Britain has the biggest waste mountain of civilian plutonium in the world is down to a bad decision in the 1960s when the nuclear industry proposed turning nuclear waste from civilian reactors into plutonium. (6)

Now, Michael Meacher MP, who was environment minister under Tony Blair has demanded an official investigation into Downing Street's approval of the original MoX plant which has already cost the taxpayer £1.34bn with little return. Meacher has asked the National Audit Office and the House of Commons' Public Accounts Committee to investigate the economic evidence used to justify the licensing of the Sellafield Mox Plant. Despite the cost, since the plant opened it has failed to fabricate more than a tiny fraction of the MoX it was designed to produce for foreign customers - just 13.8 tons over 8 years compared to a projected output of 120 tonnes a year. Mr Meacher was the minister responsible for giving the plant an operating licence in 2001 but signed the licence only after he was pressured to do so by Tony Blair's chief of staff, Jonathan Powell. (7) Blair's support for nuclear energy was part of his unbridled enthusiasm for projects that were large-scale and shiny and new and high-tech (genetically modified crops were another such keen interest). (8)

A spokesman for the National Audit Office said the Sellafield Mox Plant, which has cost more than the 2012 Olympic Stadium to build and a further £800m in commissioning and operating costs, is not on its programme of inquiries, but that the office would give Mr Meacher's request "serious consideration". (9)

- (1) Management of the UK's plutonium stocks: A consultation on the long-term management of UK-owned separated civil plutonium. <http://www.decc.gov.uk/assets/decc/Consultations/plutonium-stocks/1243-uk-plutonium-stocks.pdf>
- (2) DECC Press Release 7th Feb 2011 http://www.decc.gov.uk/en/content/cms/news/pn11_011/pn11_011.aspx See Consultations Galore, NuClear News No.26 <http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo26.pdf>
- (3) Cumbria County Council 28th April 2011 http://www.cumbria.gov.uk/news/2011/April/28_04_2011-151026.asp?Layout=Print BBC 28th April 2011 <http://www.bbc.co.uk/news/uk-northern-ireland-13230879>
- (4) Whitehaven News 13th May 2010 <http://www.whitehaven-news.co.uk/news/japanese-deal-may-save-1-000-mox-jobs-1.707306?referrerPath=home> See also "Japanese attempt to rescue Sellafield MoX Plant". NuClear News No.19 <http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo19.pdf>
- (5) Independent 11th April 2011 <http://www.independent.co.uk/news/science/governments-doomed-6bn-plan-to-dispose-of-nuclear-waste-2266047.html>
- (6) Independent 11th April 2011 <http://www.independent.co.uk/opinion/commentators/steve-connor-how-a-moneymaking-strategy-from-the-1960s-left-behind-a-toxic-legacy-2266046.html>
- (7) Independent 15th April 2011 <http://www.independent.co.uk/news/uk/politics/blair-aide-gave-me-ultimatum-to-sign-controversial-uranium-deal-meacher-claims-2268086.html>
- (8) Independent 15th April 2011 <http://www.independent.co.uk/opinion/commentators/michael-mccarthy-the-former-pms-infatuation-with-a-nuclear-future-2268085.html>
- (9) Independent 18th April 2011 <http://www.independent.co.uk/news/uk/politics/inquiry-looms-into-nuclear-fuel-plant-2269240.html>

7. Reactors at Risk around the Globe

Scores of nuclear power plants worldwide are at risk from tsunamis or earthquakes similar to the natural disasters that crippled Japan's Fukushima reactors, according to new research. Many at-risk plants are in countries less able to cope with a disaster than Japan, experts have warned. Seventy-six operating power stations in Japan, Taiwan, China, South Korea, India, Pakistan and the US are located in areas close to coastlines deemed vulnerable to tsunamis. Of 442 nuclear power stations globally, more than one in 10 are situated in places deemed to be at high or extreme risk of earthquakes – in Japan, the US, Taiwan, Armenia and Slovenia.

Nuclear safety experts are particularly concerned about an ageing Russian-built nuclear reactor only 30km from the Armenian capital, Yerevan. In December 1988, a powerful earthquake, which led to the deaths of at least 25,000 people, occurred in north-west Armenia. The following year, the Metsamor nuclear plant was shut down due to safety concerns regarding "seismic vulnerability". Although one of its reactors is now being decommissioned, another remains operational. The

International Atomic Energy Association (IAEA) has been involved in safety improvements at the plant for more than a decade. But, according to the World Nuclear Association, Metsamor is a concern to the European Union and to neighbouring Turkey. (1)

Some of Europe's 143 nuclear reactors are likely to fail a test simulating terrorist attacks, an EU Commissioner said, and others will likely see insurance bills soar as politicians try to tighten regulations. The European Union is planning to carry out tests by the year end to assess whether its reactors could survive severe conditions. The tests would simulate terrorist attacks either via cyberspace or an airplane crash and would focus on the reliability of reactor cooling systems, European Energy Commissioner Guenther Oettinger told German magazine Der Spiegel. (2)

In the latest news, as we go to Press Europe's nuclear power plants will not have to prove their ability to withstand the force of an aircraft crash under stress tests being drafted by regulators. The possibility of an aeroplane collision is the most glaring omission among scenarios laid out in a proposal for the stress tests. In spite of pleas from the Austrian government, environmental groups and some members of the European Parliament, the authors steered clear of aircraft crashes because of the insistence of some member states that the tests be limited to natural disasters and not man-made ones, such as terrorist attacks. (3)

Oettinger was planning to talk to nuclear power plant operators and insurers in Brussels in early April about harmonizing liabilities across the EU, seen as an implicit subsidy for operators in certain countries. Whereas nuclear power plants are liable under German regulations for damages of up to 2.5 billion euros, for example, those in France can be found only liable for just 91.5 million. (4)

Meanwhile, U.N. Secretary-General Ban Ki-moon says the world must prepare for more nuclear accidents on the scale of Chernobyl and Japan's Fukushima Dai-ichi plant. He said the growth of nuclear power plants is inevitable in an energy-hungry world. (5) Geoffrey Lean reports that a group of geologists and nuclear experts has worked out that at least 32 atomic power stations already operating, or under construction, in Asia alone are at risk of being hit by a wall of water. (6)

- (1) Independent 3rd April 2011 <http://www.independent.co.uk/news/science/more-than-one-in-10-nuclear-power-plants-at-risk-from-earthquakes-2260817.html>
- (2) Reuters 3rd April 2011 <http://wtaq.com/news/articles/2011/apr/03/pressure-rising-on-europes-nuclear-plant-owners/>
- (3) Wall Street Journal 3rd May 2011
<http://online.wsj.com/article/SB10001424052748703922804576301281474036232.html>
- (4) Reuters 3rd April 2011 <http://wtaq.com/news/articles/2011/apr/03/pressure-rising-on-europes-nuclear-plant-owners/>
- (5) MSNBC 20th April 2011 http://www.msnbc.msn.com/id/42684102/ns/world_news-europe/
- (6) Telegraph 20th April 2011 <http://blogs.telegraph.co.uk/news/geoffreylean/100084482/will-fukushima-wake-us-up-to-the-real-threat-of-nuclear-crisis/>

8. Nuclear Costs – too expensive to matter

Tom Noyes, who describes himself as an (American) environmental advocate and finance geek, writing in *The Guardian* asked:

“If the costs and benefits of nuclear power are so attractive, where are the investors? At least with wind and solar power, it is possible to see the cost curve dropping to the break-even point in the near future. Nuclear power, by contrast, may never be able to convince investors to put their money down without government guarantees.” (1)

The prospect of cost overruns, waste disposal and extended shutdowns are daunting enough. But mostly, it is the potential cost of catastrophic failure that scares away investors. Large-scale disasters, however rare, are colossally expensive, as well as dangerous. The first estimate of entombing the

Fukushima plant is \$12bn. And this doesn't include the other liabilities that could force the Japanese government to nationalise the Tokyo Electric Power Company (Tepco).

The total costs of nuclear power are, in any meaningful sense, incalculable. Investors face cost overruns that could burn through even the deepest pockets. The true cost of waste disposal is still not known. The cost of decommissioning, even decades away, is also a big unknown. And the cost of catastrophic failure is more than most companies are willing to face. How can any investor calculate the return on investment with such large uncertainties?

The price of nuclear power has been escalating steadily for decades, says former Royal Dutch Shell Executive Roland Kupers. (2) Since 1970, the cost in constant dollars of new nuclear generating capacity has increased nine-fold, as additional safety features make plant designs more expensive. Globally, the median age of nuclear plants is now 27 years so much of the cost saving through learning has gone.

The exact opposite is occurring with renewables. We are learning quickly, and costs are plummeting through the sheer volume of construction: 40,000 wind turbines over the past decade in Europe alone. And solar power will reach grid parity in sunny regions like South Africa, Greece, and Florida by 2015. Before we finish building the next nuclear plant, it will be an expensive and increasingly irrelevant relic of the 1950's dream of "atoms for peace."

Kupers says we are witnessing a watershed in the debate on greenhouse-gas emissions. A low-carbon growth path requires neither coal nor new nuclear power. The way forward is to pursue more ambitious and consistent climate and energy policies that drive the massive deployment of renewables; install new load-balancing electricity grids; and ensure large-scale adoption of energy-efficiency measures. This agenda promises to boost investments, stimulate economic growth, and create jobs while increasing competitiveness and energy security. In both economic and ethical terms, nuclear power merits no role

(1) Guardian 3rd April 2011

<http://www.guardian.co.uk/commentisfree/cifamerica/2011/apr/03/nuclearpower-japan>

(2) Project Syndicate 25th April 2011 <http://www.project-syndicate.org/commentary/rkupers2/English>

9. Nuclear Subsidy

The coalition government is opening a legal loophole that could allow taxpayer-funded guarantees to nuclear power stations, while publicly insisting that the industry will stand on its own. An obscure clause in the forthcoming energy bill means that nuclear power companies could in future be eligible for bailouts, despite ministers' repeated denials that no public subsidies would be made available. Clause 102 of the energy bill currently going through parliament provides for the secretary of state to make public agreements with nuclear power companies on how much they will spend on certain items, such as decommissioning. But the government cannot change these public agreements in future if new situations arise – for instance, if a new safety feature is developed that ought to be installed. If the nuclear company stuck to the original agreement, the cost of these unforeseen circumstances would then have to be met by the taxpayer instead.

Meg Hillier, the shadow spokeswoman for energy and climate change, said: "*This clause is so confusing and loosely worded that it really does leave open a potential loophole that could leave taxpayers facing liabilities in future. The government is saying one thing on nuclear and doing another.*"

Under current rules, the secretary of state is allowed to approve a "funded decommissioning programme", by which a company explains how its nuclear sites are to be cleaned up and how the waste will be dealt with. Companies are required to put aside sufficient money for clean-ups.

However, under clause 102 (previously clause 99 when the bill was debated in the House of Lords), these obligations will be subtly changed, because the secretary of state can give a guarantee at the outset that any arrangement with the nuclear company cannot be amended in the future, except by mutual consent. This will mean that if anything unexpected happens – for instance, if there is an accident at a plant, or issues with stored waste, or if new safety features are developed that should be installed – then the government would become liable for the extra cost, rather than the nuclear plant owner. (1) Friends of the Earth has been calling on supporters to e-Mail Chris Huhne, Charles Hendry and Meg Hillier to oppose the move. (2)

- (1) Guardian 4th April 2011 <http://www.guardian.co.uk/environment/2011/apr/04/loophole-energy-bill-nuclear>
- (2) FoE 18th April 2011 http://www.foe.co.uk/campaigns/climate/press_for_change/nuclear_loophole_30408.html?ic_number=32611999&m_sourcecode=CLONLINE&product=CLIMATEONLINE&Salutation=Dear%20Peter

10. Low Level Waste – dispersed around landfill sites.

Hundreds of people in Northamptonshire have voted against plans to dispose of radioactive waste in their local landfill site in a referendum organised by Local Democracy in Action (LDA). Plans by Augean plc to dump the low-level radioactive waste at the East Northants Resource Management Facility (ENRMF) landfill in Kings Cliffe, were rejected by Northamptonshire County Council last March. The company appealed and locals are now waiting for a decision from Communities Secretary Eric Pickles, which is expected next month. In a bid to highlight the strength of feeling against the proposals, LDA organised the referendum in 12 local parishes, including Kings Cliffe, as well as some communities in nearby Rutland. The poll, managed by local authorities East Northants District Council and Rutland County Council, asked voters: "*Do you want your parish council to strongly object to the disposal of low level waste in the East Northants Resource Management Facility?*" LDA said 98% of voters were in favour of getting their parish councils to object to the plans. And for the 11 villages voting under East Northants District Council rules, the turnout was 46% - impressive for a referendum according to LDA. (1) The villagers headed to London on the 25th anniversary of Chernobyl convinced that if the Coalition Government's statements about local democracy means anything Eric Pickles will have to take account of the local referendum when he makes his decision on or before 24th May. (2)

Further north, Tim Knowles, Cumbria County Council's cabinet member for the environment, has condemned a decision to allow nuclear waste to be buried at a dump near Workington. He called the decision "*disappointing and disheartening*". The Environment Agency granted a permit for "very low-level" atomic waste to be disposed of at the Lillyhall landfill site. The site will now be able to accept radioactive materials including rubble and soil, demolition waste and clothes and gloves, mainly from Sellafield. Knowles said the decision was "*short-sighted*" because it could create a negative perception of Cumbria and even damage support for the nuclear industry locally. He says waste from Sellafield should be dealt with as close to the site as possible and not "*dispersed across west Cumbria*". (3)

- (1) Rutland & Stamford Mercury 12th April 2011 http://www.stamfordmercury.co.uk/news/regional/26435/poll_rejects_n_waste_dump_plans_1_2581670
- (2) Anglia Tonight 26th April 2011 <http://www.itv.com/anglia/nuclear-referendums26650/>
- (3) Carlisle News and Star 7th April 2011 <http://www.newsandstar.co.uk/news/go-ahead-to-dump-nuclear-waste-at-cumbrian-landfill-site-condemned-1.825584?referrerPath=/news-round-up-1.50001>

11. Chernobyl deaths controversy likely to run for another 25 years.

The 25th anniversary of Chernobyl and heated exchanges between George Monbiot and anti-nuclear campaigner Dr Helen Caldicott, have both led to the inevitable annual debate about the Chernobyl

death toll. Jim Green is the national energy campaigner with Friends of the Earth Australia has been unpicking some of the claims. (1)

Monbiot says the “official death toll” from Chernobyl is 43. (2) Helen Cadicott, on the other hand puts the figure at 985,000. (3)

The debate over the Chernobyl death toll turns on the broader debate over the health effects of low-level ionising radiation and in particular the risk of cancer. The weight of scientific opinion holds that there is no threshold below which ionising radiation poses no risk and that the risk is proportional to the dose — the “linear no-threshold” (LNT) model.

Uncertainties will always persist. In circumstances where people are exposed to low-level radiation, medical studies are unlikely to be able to demonstrate a statistically significant rise in cancer rates. This is because of the “statistical noise” in the form of widespread cancer incidence from many causes, the long latency period for some cancers, limited data on disease incidence, and various other data gaps and methodological difficulties. Notwithstanding the difficulties, there is growing scientific confidence in the LNT model.

Governments clearly believe that low-level radiation is to be avoided, hence the evacuation zone around the Fukushima nuclear plant in Japan, widespread restrictions on food and water consumption and the growing number of countries imposing restrictions on the importation of food from Japan. A few scientists argue that low-level radiation is harmless or even beneficial. Their voice is amplified by the nuclear industry.

On Chernobyl, there is general agreement that 30-60 people died in the immediate aftermath of the accident. Beyond that, medical studies generally don't indicate a statistically significant rise in cancer incidence in populations exposed to Chernobyl fallout. Nor would anyone expect them to, because of data gaps and methodological problems.

Dr Elizabeth Cardis from the International Agency for Research on Cancer says the total lifetime numbers of excess cancers will be greatest among the ‘liquidators’ (emergency and recovery workers) and among the residents of ‘contaminated’ territories, of the order of 2000 to 4600 among each group (the size of the exposed populations is 200,000 liquidators and 6,800,000 residents of ‘contaminated’ areas). “*These increases would be difficult to detect ... against an expected background number of 41,500 and 800,000 cases of cancer respectively among the two groups.*” For a few marginal scientists and nuclear industry supporters, that's the end of the matter — the evidence is lacking and thus the death toll from Chernobyl was just 30-60. Full-stop. But for those of us who prefer mainstream science, we can still arrive at a scientifically defensible estimate of the Chernobyl death toll. It's simple — use estimates of the total radiation exposure, and multiply by a standard risk estimate based on the LNT model.

The International Atomic Energy Agency (IAEA) estimates a total collective dose of 600,000 person-Sieverts over 50 years from Chernobyl fallout (*IAEA Bulletin*, vol.38, no.1, 1996). A standard risk estimate from the International Commission on Radiological Protection (ICRP) is 0.05 fatal cancers per Sievert. Multiply those figures and we get an estimated 30,000 fatal cancers.

According to the Biological Effects of Ionising Radiation (BEIR) of the US National Academy of Sciences, the LNT model may overstate risks or understate them by a factor of two. Thus the estimated death toll ranges from something less than 30,000 and up to 60,000. A number of studies apply that basic methodology — based on collective radiation doses and risk estimates — and come up with results varying from 9000 to 93,000 deaths. That 10-fold difference seems significant, but it is easily enough explained by the differing approaches and assumptions used in the various studies. For example, whether they consider radiation exposure across Europe or just in the most heavily

contaminated countries of Eastern Europe. And of course that 10-fold difference is peanuts compared to the many orders of magnitude separating Monbiot's 43 and Caldicott's 985,000.

To briefly note some of the most important studies:

- Reports by the UN Chernobyl Forum (4) and the World Health Organization (5) in 2005-06 estimated up to 4000 eventual deaths among the higher-exposed Chernobyl populations and an additional 5000 deaths among populations exposed to lower doses in Belarus, the Russian Federation and Ukraine.
- A study by Cardis et al. reported in the *International Journal of Cancer* estimates 16,000 deaths. (6)
- The TORCH report: Radiation scientists Dr Ian Fairlie and Dr David Sumner estimate 30,000 to 60,000 deaths. (7)
- A 2006 report, commissioned by Greenpeace and involving 52 scientists, estimates a death toll of about 93,000. (8)

Caldicott relies on the Annals of the New York Academy of Sciences book by Yablokov et al for her figure of 985,000. This is reviewed on the No2 Nuclear Power website. (9) Green doesn't say much about this report apart from "*the study uses a loose methodology to arrive at an unlikely conclusion*".

Meanwhile, the European Committee on Radiation Risk (ECRR) has published calculations on the number of cancers resulting from Chernobyl fallout. They forecast 1.4 million additional cancer cases in the 50 years to 2036. (10)

A new report from the German Affiliate of International Physicians for the Prevention of Nuclear War (IPPNW) concludes that 25 years after the reactor catastrophe cancer and other diseases have emerged on a scale that, owing to the long latency period, might have appeared inconceivable immediately following the catastrophe. The number of non-cancerous diseases is far more dramatic than had ever before been imagined. "New" symptoms, such as the premature aging of liquidators, raise questions that research is still unable to answer. By 2050 thousands more cases of illnesses will be diagnosed that will have been caused by the Chernobyl nuclear catastrophe. The delay between cause and noticeable physical reaction is insidious. Chernobyl is far from over. (11)

Particularly tragic is the fate of the thousands of children who were born dead or died in infancy, who were born with malformations and hereditary diseases, or who are forced to live with diseases they would not have developed under normal circumstances. The genetic defects caused by Chernobyl will continue to trouble the world for a long time to come – most of the effects will not become apparent until the second or third generation. Even if the extent of the health effects is not yet clear, it can still be predicted that the suffering brought about by the nuclear disaster in Fukushima is, and will be, of a similar magnitude, according to IPPNW.

Finally, many people have been complaining to the BBC about a programme aired on Radio 4 on 26th April and 1st May called "*Fallout: the Legacy of Chernobyl*", on April 26 and May 1 2011. Radiation specialist, Dr Fairlie explains in a comment piece on the no2nuclearpower website why this programme showed such a lack of balance to the point of apparent bias. (12)

- (1) Green Left Weekly 17th April 2011 <http://www.greenleft.org.au/node/47357>
- (2) George Monbiot 16th March 2011 <http://www.monbiot.com/2011/03/16/atomised/>
- (3) Democracy Now 30th March 2011
http://www.democracynow.org/2011/3/30/prescription_for_survival_a_debate_on
- (4) <http://www.iaea.org/Publications/Booklets/Chernobyl/chernobyl.pdf>
- (5) <http://www.who.int/mediacentre/news/releases/2006/pr20/en/index.html>
- (6) IARC 20th April 2006 <http://www.iarc.fr/en/media-centre/pr/2006/pr168.html>
- (7) <http://www.chernobylreport.org/?p=summary>

- (8) <http://www.greenpeace.org/international/en/news/features/chernobyl-deaths-180406/>
- (9) <http://www.no2nuclearpower.org.uk/reviews/review06.php>
- (10) <http://euradcom.org/2011/chernhealthrept.htm>
- (11) Health Effects of Chernobyl: 25 years after the reactor catastrophe.
http://www.chernobylcongress.org/fileadmin/user_upload/pdfs/chernob report 2011 en web.pdf
- (12) http://www.no2nuclearpower.org.uk/articles/BBC_R4_Chernobyl_programme.pdf

12. Impact of Fukushima on Europe

The risks associated with iodine-131 contamination in Europe were no longer "negligible" in mid-April according to CRIIRAD, a French research body on radioactivity. The NGO was advising pregnant women and infants against "risky behaviour," such as consuming fresh milk, creamy cheese, rainwater or vegetables with large leaves.

Data for the west coast of the United States, which received the Fukushima radioactive fallout 6-10 days before France, reveals that levels of radioactive iodine-131 concentration are 8-10 times higher there, the institute says.

The institute stresses that there is no risk whatsoever, even for children, of standing in the rain without protection. But consumption of rainwater as a primary source of drinking water should be avoided, particularly among children, it said. Spinach, salads, cabbage and other vegetables with large surface areas are among those food products that are particularly sensitive to iodine-131 contamination, if they are cultivated outside and exposed to rainwater. Washing vegetables does not help, as iodine-131 is quickly metabolised by the plants.

CRIIRAD bases its conclusions on the fact that the Euratom Directive (1996) establishes general principles and safety standards on radiation protection in Europe. According to the directive, the impact of nuclear activity can be considered negligible if doses of radiation do not exceed ten micro sieverts (μSv) per year. Beyond this value, possible measures should be considered to reduce exposure, it says. With regard to Fukushima fallout, the main issue is to limit ingestion of iodine-131. The amount of iodine-131 capable of delivering a dose of 10 μSv varies greatly depending on the age of consumers. Children up to two years old are the most vulnerable and ingestion of 50 becquerel (Bq) is enough to deliver to the body a dose of 10 μSv , according to the institute. If the foods (leafy vegetables, milk etc.) contain between one and 10 Bq per kg or more, it is possible that the reference level of 10 μSv may be exceeded within two to three weeks. (1)

Meanwhile, according to Renewable Energy Focus, if Japan adopted an aggressive renewable energy policy like that of Germany, it could, within 10 years, generate more than four times the electricity lost at the Fukushima 1 nuclear power plant, cutting the country's reliance on nuclear power by one-half or more, (2)

- (1) Euractive 11th April 2011 <http://www.euractiv.com/en/health/radiation-risks-fukushima-longer-negligible-news-503947> NB. This Euractive article has mixed up its microsieverts and millisieverts. Under the sub-heading "level of risky dose" it mentions 10mSv four times. Each of these should be ten microsieverts. To avoid any doubt go to the original CRIIRAD briefing. http://www.criirad.org/actualites/dossier2011/japon_bis/risks_in_France_v4.pdf The rest of the article is accurate.
- (2) Renewable Energy Focus 21st April 2011 <http://www.renewableenergyfocus.com/view/17544/comment-what-feedin-tariffs-could-do-for-japans-electricity-shortage/>

13. Scottish renewable – 80% or 100%

By the time you read this, elections for the Scottish Parliament will be over. From the energy point of view this must have been one of the most remarkable election campaigns to take place anywhere in

the world with the two main Parties – Labour and the Scottish National Party (SNP) arguing over whether Scotland should aim to meet either 80 or 100% of its electricity requirements from renewable energy by 2020.

The SNP's manifesto pledges a target of producing 100% of Scotland's electricity from renewable by 2020, as well as the creation of 130,000 jobs in the "low-carbon economy". Scottish First Minister, Alex Salmond said he wanted to "*reindustrialise Scotland through the green energy revolution where we lead the world. Scotland's vast renewable power sources are an enormous opportunity*". The proposal says the 100% target can be reached because of the scale of Scotland's offshore renewable potential. It predicts Scotland will be a major exporter of electricity with "*no upper limit to our ambition*".

However, Lewis Macdonald, the Labour Party energy spokesman, said: "*Labour is behind the drive to produce more electricity from renewable sources but Alex Salmond's manifesto pledge is pure fantasy. The current target of 80% for 2020 is already extremely ambitious and will be difficult to achieve, so to go beyond that is simply unrealistic.*" (1)

CBI Scotland director Ian MacMillan said the target was both unrealistic and undesirable. Peter Hughes, chief executive of trade body Scottish Engineering, said the failure to commission new nuclear stations would leave Scotland exposed to an unreliable power source. (2) Even Ed Miliband stepped into the fray accusing Alex Salmond of dreaming up "*fairy stories*" and saying the plan to power the country from renewables by 2020 "*stretches credulity*", insisting politicians have to be "*realistic*" about the future of energy use. (3)

Scottish Labour unveiled plans in February to set up a new organisation to help Scotland become a world leader in the renewable energy sector and create over 60,000 new jobs in the next decade. (4)

"Energy Scotland will co-ordinate our policy on renewables such as wind and wave power as well as nuclear, electricity, energy efficiency, home insulation and household renewables, the grid infrastructure and coal, oil and gas." (emphasis added)

But, in this post-Fukushima election, nuclear power has hardly rated a mention from the politicians. Scottish Labour leader Ian Gray – the constituency MSP for the Torness area – says *Energy Scotland* will lead a 'green housing revolution' for homes across Scotland with an initial target to have 10,000 more homes producing renewable energy in the next four years. Labour's ambition is that by 2020 household and community renewables will be standard in new and existing houses. The plans will create 300 new jobs and 750 traineeships. The scheme will also help eradicate fuel poverty. (5)

A Scottish Labour Government would work with local authorities across Scotland to insulate thousands more homes and fit them with solar panels, or other forms of community energy schemes such as renewable heat. Labour's shadow environment minister Sarah Boyack MSP said: "*The SNP have dragged their heels on small scale renewables for our housing, but Labour will make the most of the new opportunities that are now available from the Feed in Tariff and the forthcoming Renewable Heat Incentive.*"

The SNP's 100% target was welcomed by Dr Richard Dixon, director of WWF Scotland. He said: "*This excellent commitment will help Scotland meet climate targets, create green jobs and exports, and send a strong message to other countries.*" A widely publicised report from energy consultants Garrad Hassan, sponsored by Friends of the Earth Scotland, RSPB and the WWF, shows how Scotland could comfortably meet 100% of electricity demand from renewable sources by 2020. The nation could increase this figure to 185% by 2030, it added, giving significant potential for export. Dixon points out that in 2000 Labour environment minister Sarah Boyack set a target of 17.5% of Scotland's electricity consumption to come from renewables by 2010. This was only a 5% increase on current production, but at the time her civil servants told her this was "very brave", but the target was

met years early. The Labour-Liberal Democrat government went on to set a target for 2020 of 40% and by 2007 the Lib Dems were proposing 100% by 2050, which was impressive at the time. When the SNP came to power they set the 2020 target at 50%, but soon raised it to 60% and only recently raised it again to 80%, the same level promised by Labour and the Lib Dems in their manifestos, with the latter also promising 100% by 2025. (6) Dixon said there is now very little chance of new reactors being built in Scotland. (7)

Commenting on the debate regarding Scotland's renewable energy targets, Ignacio Galán, chairman and chief executive of Scottish Power Renewables' parent company Iberdrola, said:

“Scotland is at the forefront of the renewable revolution. With fair charging and the correct political will it is entirely credible to see Scotland producing 100% of its own electricity requirements from renewables by 2020 as well as continuing to produce power from a range of other sources. Iberdrola are keen to be a key part of the investment required to bring that power into production.” (8)

Rick Eggleston, the managing director of wind turbine manufacturer RE power, also threw his weight behind Alex Salmond. (9)

Niall Stuart Chief Executive of the trade body, Scottish Renewables took issue with Iain McMillan and Peter Hughes's portrayal of the impact of Scotland generating the equivalent of 100 per cent of its electricity demand from renewable sources by 2020. He said, nobody is arguing that Scotland would not continue to have other forms of generation alongside a significantly expanded renewables sector. Greater renewables capacity, as part of a balanced mix of technologies, would allow Scotland to meet more of its own needs from sustainable, low-carbon generation and grow its electricity exports to other parts of the UK and Europe. It would also create wealth and employment here in Scotland. The target is ambitious, but not beyond reach. It will require concerted action to build the right market frameworks and grid infrastructure, and to maintain the right balance in the planning system, but the industry and technology have developed rapidly over the last few years and only a proportion of existing plans and commitments for wind, wave, tidal, biomass and hydro are required to hit the target. (10)

The Scottish Chambers of Commerce (SCC) accused the Parties of engaging in a "bidding war" on ever higher targets for renewable energy ahead of the election. Warning of a possible energy gap between 2020 and 2030, when most of Scotland's large power stations are scheduled for decommissioning, the group says it will be "essential" to invest in a "new generation" of nuclear reactors to ensure supplies are secure and affordable. (11) Friends of the Earth and WWF reminded the SCC to read the Garrad Hassan report. (12) FoE-Scotland has published a new myth-busting pamphlet on renewable energy in Scotland, based on the Garrad Hassan research. (13)

Professor Stephen Salter, the father of wave power, dealt with the issue of intermittency which he said was being used by nuclear enthusiasts to attack SNP policy. It is true that if weather systems are dominated by anticyclones to the east we can have long periods of low wind and wave activity accompanied by extreme cold. During these unusual periods Scotland would have to burn the gas that was still in the ground because we had not burned it when wind patterns were normal. There will be plenty of Scottish gas for some time yet. The nuclear advocates want us to believe that only nuclear can provide firm base-load but this is far from the case. If Scotland were to depend on two new reactors they would also have to be backed up by gas, hydro and the English connector. If the full potential of close-packed turbines in the Pentland Firth was combined with close-packed offshore wave plant and offshore wind, Scotland would have far more electricity than it could ever need. The surplus could be used for the synthesis of easily stored liquid fuels and methane, giving complete firmness and valuable exports. (14)

The Scottish Greens argued that the real emphasis should be on community- and publicly-owned renewables, on energy efficiency, and on a broader mix of energy sources.

Patrick Harvie MSP said: *"There's an urgent need for smaller and community-run renewables projects as part of a decentralised energy system, and these kind of projects can also build serious community support. Beyond that, local authorities need support to start building the kind of local energy projects which can bring in revenue that's sustainable in every sense. Labour and the SNP, despite some clear ambition on large scale renewables, are missing this opportunity - and each is holding the door open either to new nuclear or coal-fired power stations. Neither has yet grasped the opportunity to commit to a real national energy efficiency drive. The cheapest power station is the one you don't have to build."* (15)

- (1) Herald 15th April 2011 <http://www.heraldscotland.com/news/election/snp-s-100-green-aim-is-a-fantasy-1.1096491>
- (2) Scotsman 15th April 2011 <http://thescotsman.scotsman.com/news/Salmond-under-fire-for-39cloud.6752112.jp>
- (3) Scotsman 16th April 2011 <http://thescotsman.scotsman.com/news/Miliband-scorns-SNP-39fairy-stories39.6752724.jp> See also <http://thescotsman.scotsman.com/opinion/Leader-Salmond-must-prove-he39s.6752672.jp>
- (4) Scottish Labour Press Release 7th February 2011 <http://www.scottishlabour.org.uk/gray-reveals-energy-scotland>
- (5) Labour in the Scottish Parliament 21st Feb 2011 <http://www.sarahboyack2011.com/wp-content/uploads/2011/02/Green-Deal-Launch.pdf> Also Herald 22nd Feb 2011 <http://breakingnews.heraldscotland.com/breaking-news/?mode=article&site=hs&id=N0077621298295095863A>
- (6) Scotsman 29th April 2011 <http://thescotsman.scotsman.com/opinion/Richard-Dixon-Scotland-could-have.6759510.jp>
- (7) Edinburgh Evening News 26th April 2011 <http://edinburghnews.scotsman.com/edinburgh/Call-to-ditch-nuclear-plants.6758000.jp> WWF Scotland Press Release 26th April 2011 http://scotland.wwf.org.uk/what_we_do/press_centre/?4859/Chernobyl-25th-Anniversary--No-room-for-new-reactors-in-Scottish-energy-policy
- (8) Scottish Power Press Release 26th April 2011 http://www.scottishpower.com/PressReleases_2175.htm
- (9) Scotland on Sunday 1st May 2011 <http://scotlandonsunday.scotsman.com/business/Renewables-are-39only-answer39-to.6760358.jp>
- (10) Scotsman 16th April 2011 <http://thescotsman.scotsman.com/opinion/Letter-Power-supplies.6752584.jp>
- (11) Scotsman 20th April 2011 <http://news.scotsman.com/news/Scotland-needs-new-nuclear-power.6754811.jp>
- (12) Scotsman 22nd April 2011 <http://thescotsman.scotsman.com/opinion/Letter-Out-of-step.6755925.jp>
- (13) See "Power of Scotland Explained" <http://www.foe-scotland.org.uk/power-explained>
- (14) Scotsman 25th April 2011 <http://thescotsman.scotsman.com/opinion/Stephen-Salter-The-winds-of.6757343.jp>
- (15) Scottish Greens 28th April 2011 <http://www.scottishgreens.org.uk/news/show/6564/greens-energy-debate-missing-the-point->

14. Solar Disarray

The row about the Government's plan to slash solar subsidies has rumbled on. (1) Renewable Energy Focus asks if the UK Government is turning its back on renewables in favour of nuclear. Following recent proposals from the UK Department of Energy and Climate Change (DECC) to dramatically reduce the tariff paid to those with solar PV (photovoltaic) energy schemes generating more than 50 kW, power experts at IMS Research are questioning the viability and future of solar energy in the UK:

"Limiting solar power to small scale installations means the sector will simply never take off, other than creating a niche industry. And while countries such as Japan, Italy, Germany, China and the U.S. have said that they will be giving greater financial support to solar power and already have substantial solar PV capacity in place, the UK government has taken the opposite approach, making it clear that nuclear energy is definitely part of the plan for power generation in the UK." (2)

In a brilliant display of joined-up thinking, plans for a Government-wide solar power scheme have had to be put on ice following the cuts to the solar subsidy scheme. At a Cabinet Office-sponsored meeting in November, Whitehall departments and other public sector bodies were briefed by industry experts on the opportunities of the feed-in tariff (FIT) scheme for solar-panel installations on public buildings such as hospitals, barracks, and council buildings. But preparatory work by the Government's procurement office, Buying Solutions, was pulled shortly after the announcement of a fast-track review of the FIT, according to industry sources. (3)

You can keep up with the debate by signing up to receive weekly Micro Power News here:
<http://www.microgenscotland.org.uk/enews.php>

- (1) See Government in Solar Disarray, Nuclear News No.27
<http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo27.pdf>
- (2) Renewable Energy Focus 8th April 2011
<http://www.renewableenergyfocus.com/view/17201/comment-is-the-uk-government-turning-its-back-on-renewable-in-favour-of-nuclear/>
- (3) Independent 11th April 2011 <http://www.independent.co.uk/news/business/news/whitehall-pulls-plug-on-solar-panel-scheme-2266197.html>

15. Thousands seek delay in AP1000 decision

The Fukushima nuclear disaster has amplified a host of concerns about the AP1000 reactor-type according to an alliance of NGOs in the US, which have launched a legal challenge and called for the U.S. Nuclear Regulatory Commission (NRC) to suspend its fast-track approval process until design problems are resolved and the lessons from Japan are fully and openly analyzed. (1)

The alliance of NGOs, called the AP1000 Oversight Group, said industry pressure has caused the NRC to bypass testing of key aspects of the Westinghouse design despite persistent problems and a vigorous dissent by one of the agency's longest serving experts. Dr. John Ma, the NRC's lead structural engineer in charge of evaluating the reactor's shield building says a new, non-standard concrete material is so brittle it could shatter "like a glass cup" under various natural or manmade impacts.

Other problems cited include the AP1000's storage density for spent fuel pools, loss of offsite power, and a containment structure weaker than those at most U.S. reactors. Also included is a continuing dispute over the passive emergency cooling system, with NRC science advisors warning that potential clogging of recirculation filters could increase the risk of reactor core meltdown by a factor of 6,000. The alliance also called for the NRC to revisit regional emergency planning based on long-running concerns about NRC's 10-mile evacuation zone, noting the agency's call for evacuation of U.S. citizens living within 50 miles from the Fukushima facility.

In a legal motion filed directly with the NRC's five commissioners, the AP1000 Oversight Group said federal law requires suspension of the design approval process to ensure sufficient consideration of the concerns of Dr. Ma and other experts, along with new information to be gleaned from the continuing emergency in Japan that has spewed large amounts of radiation into the air, ground and ocean.

The alliance also cited a February concession by NRC Chairman Greg Jaczko that shield building standards should be improved later, and his statement that the building "is strong enough" for regions of the nation with low earthquake expectations.

The Oversight Group also said countless design revisions create a regulatory morass that could mean attempts to build the AP1000 would repeat the economic catastrophe of the first generation of U.S. nuclear construction that led to bankruptcies, billions in cost overruns and cancellations. The NRC

plans to allow continuing design changes even after construction begins, a problem that has plagued French nuclear plant builders with massive cost overruns and delays at two European projects.

The NRC announced its preliminary approval of the AP1000 design in February, but were required to allow public comments within 75 days, with NRC Staff finalizing the approval 30 days later.

Platts reported on 25th April that more than 10,000 comments asked the NRC delay to delay its AP1000 decision. Most of the comments were received via a form on the FoE USA website. A technical review of the comments has not been completed. But the number of responses alone is unlikely to affect the timetable. The NRC says it could complete a final rule on the AP1000 by September.

- (1) Friends of the Earth USA Press Release 6th April 2011 <http://www.foe.org/new-reactor-model-faces-legal-challenge>

16. Nuclear Liability

The Nuclear Free Local Authorities (NFLA) responded to the UK Government's consultation on nuclear third party liability insurance, with a request that the consultation is withdrawn until the learning points from the Fukushima incident are known and acted upon (1).

The consultation on proposed changes by the UK Government to the Paris-Brussels Convention on nuclear third party includes a significant and positive increase of the 'cap' on nuclear companies to £1 billion in the event of an accident at a nuclear reactor. With the estimate of the total amount of compensation required in Japan after the Fukushima disaster now at least 4 trillion yen (£29.2 billion) (2) and up to £80bn (3) that leaves the taxpayer here shouldering a heavy potential risk.

From the U.S. to Japan, it's illegal to drive a car without sufficient insurance, yet governments around the world choose to run over 440 nuclear power plants with hardly any coverage whatsoever, says the Washington Post. The Fukushima disaster brings to the fore one of the industry's key weaknesses that nuclear power is a viable source for cheap energy only if it goes uninsured. Governments that use nuclear energy are torn between the benefit of low-cost electricity and the risk of a nuclear catastrophe, which could total trillions of dollars and even bankrupt a country. The bottom line is that it's a gamble: Governments are hoping to dodge a one-off disaster while they accumulate small gains over the long-term. The cost of a worst-case nuclear accident at a plant in Germany, for example, has been estimated to total as much as €7.6 trillion (\$11 trillion), while the mandatory reactor insurance is only €2.5 billion. "The €2.5 billion will be just enough to buy the stamps for the letters of condolence," said Olav Hohmeyer, an economist at the University of Flensburg who is also a member of the German government's environmental advisory body. (3)

- (1) NFLA Press Release 20th April 2011
http://www.nuclearpolicy.info/docs/news/NFLA_PR_Nuclear_Liabilities.pdf NFLA Submission
http://www.nuclearpolicy.info/docs/consultations/NFLA_P_B_Liability_Response.pdf
- (2) Asahi 4th May 2011 <http://www.asahi.com/english/TKY201105030093.html>
- (3) Guardian, quoting from the Yomuii Shimbun newspaper:
<http://www.guardian.co.uk/world/2011/apr/13/japan-nuclear-plant-evacuees-compensation>
- (4) Washinton Post 21st April 2011. Same article here:
<http://www.globalnews.ca/Nuclear+plants+viable+only+when+uninsured/4653983/story.html>