



Energy Review Update No.10
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1. Nuclear plants massively over budget and late.

A new independent report commissioned by Greenpeace reveals that country after country has seen nuclear construction programmes go considerably over budget. The report “The Economics of Nuclear Power” finds that average nuclear power station construction runs up to 300% over budget and takes four years longer to build than planned. (1) The nuclear industry, despite assertions to the contrary, is facing spiralling costs, construction delays, safety failings and falling global demand for its technology. Europe's newest reactor in Finland is already 18 months behind and €700 million over budget only 18 months into the construction project.

Over the last two decades there has been a steep decline in orders for new reactors globally, mainly because of poor economics. A fifty year-old industry would normally expect to see technological improvements and experience resulting in improved economic efficiency. But the nuclear industry has not followed this pattern. Instead rising costs, delays and problems with new reactor designs are the norm.

One of the report's authors, Steve Thomas, professor of energy policy at Greenwich University told *The Guardian*: “[t]he nuclear industry has always made unfulfilled promises; history reveals a damning testament to its failure. Pursuing a new programme of nuclear reactors would deny us the opportunity to make the necessary investment in renewable technologies and energy efficiency to meet future energy needs in a viable and sustainable way.” (2)

In the US 75 reactors were predicted to cost \$45bn but the actual cost was \$145bn. In India, 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.

(1) 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

(2) Guardian 3rd May 2007 <http://business.guardian.co.uk/story/0,,2070918,00.html>

2. New nukes to be 'fast tracked'

According to *The Guardian* Ministers are planning to fast-track their energy strategy and give the go ahead to new nuclear reactors before Christmas despite the successful Greenpeace legal challenge which argued there had been insufficient consultation. (1) The Government will publish its Energy White Paper on 23rd May.

"Whitehall sources" told *The Guardian* that nuclear is necessary to prevent the lights going out by 2015. Ministers have been persuaded of the need to act quickly, "*we are concerned that unless we act soon, the lights could go out in 2015 in the event of a really hot or really cold spell*", a Whitehall insider told the newspaper. Greenpeace observed that this is not only alarmist, but simply fails to reflect the facts and even the government's own evidence (2), smacking of desperation from a government determined to justify its pro-nuclear agenda.

There will be two White Papers published in May followed by what should be a full public consultation process, after which a final decision will be taken. The Energy White Paper will argue for a so-called "balanced energy portfolio", including nuclear, and the other White Paper is clearly designed to speed up the planning system, allowing new power stations to be given the go-ahead within two to three years. The Planning White Paper, published on May 21, detailed proposed reforms to implement a radical shake-up in Britain's "cumbersome planning system" and is expected to be followed by a bill within months. Plans to speed up the UK's planning system - a longstanding business bugbear - go hand in hand with the momentum behind government's plans to build nuclear power stations. (3)

The government's energy blueprint will also include plans for an expansion of renewables. But in an unprecedented move, the Renewable Energy Association (REA) has written to the Government asking for the White Paper to be delayed until it can be rewritten to fully reflect new commitments made at April's EU Summit. The REA says there just has not been enough time for the White Paper to credibly define the measures needed to meet the new ambitious targets. (4) The new European targets include a commitment to providing 20% of total energy - not just electricity - from renewables by 2020, as well as 10% of transport fuels.

Following reports in Energy Review Update No.9 (ERU9) (5) that most of the nuclear utilities had expressed an interest in working with British Energy, (6) many also appear to be seeing the publication of the White Paper as the starting pistol for the race to get licencing approval for their favoured reactor type.

EDF Energy and Areva are preparing to seek a UK licence for the European Pressurised Water Reactor (EPR), (7) the same type of reactor as the one being built in Finland and now approved (8) for Flamanville in Northern France. The pre-licensing process hasn't begun yet, as it will have to wait for details expected in the White Paper, but Prime Minister-in-waiting Gordon Brown's brother Andrew, head of media relations for EDF, told Bloomberg news that "*EDF Energy is preparing to put forward the EPR model used at Flamanville 3 for pre-licensing in the U.K.*" (9)

EDF Energy's CEO, Vincent de Rivaz, says the Company is in talks with British Energy (BE), and hopes to have the first reactor connected to the grid by Christmas 2017. But he warned that new nuclear projects could stall, and Britain could face electricity shortages, if the government did not come to a clear decision in the autumn and introduce the necessary legislation in that parliamentary session. (10)

Meanwhile, the American company, General Electric (GE) has written to the Government to say formally that the company would put its latest reactor design, the ESBWR (Economic Simplified Boiling Water Reactor), forward for a licence. (11) Another major contender will be Westinghouse, which was sold by the British Government to Toshiba last year. All three reactor-design companies - Areva, GE and Westinghouse have held intense talks with various utilities, such as RWE and Eon, over possible partnerships. Separately, GE and Areva have applied for licences for their latest reactor designs in the US to take part in the nuclear building programme there.

Westinghouse has already received US certification, while the GE and Areva reactor designs are in the application process.

Once the Government gives the green light to new reactors, BE wants to press ahead as quickly as possible with its plans. Informal talks with European rivals EDF, RWE and E.ON over the past six months about forming consortia have, so far, led to none being formed, but BE has told the trio to come up with concrete plans for how they would use the sites - and what they propose to give the nuclear generator in return for providing the land. The Government could force BE to sell the sites to the highest bidder, but the Company's preferred option is to be given part-ownership of the new reactors, and a role in operating the reactors. (12)

(1) Guardian 2nd May 2007 <http://business.guardian.co.uk/story/0,,2070133,00.html>

(2) Guardian 23rd May 2007 <http://www.guardian.co.uk/letters/story/0,,2085718,00.html>

(3) FT 8th May 2007

<http://www.ft.com/cms/s/2c6bc3e6-fd01-11db-9971-000b5df10621.html>

Guardian 9th May 2007

<http://society.guardian.co.uk/societyguardian/story/0,,2074654,00.html>

(4) "Blair wants to fast track his nuclear plans" by Kirsty Walker, Daily Mail, 3rd May 2007 and Renewable Energy Association Press Release 2nd May 2007, http://www.r-p-a.org.uk/article_default_view.fcm?articleid=2532

(5) Greenpeace 21st May 2007, Energy Review Update No.9 (ERU9)

<http://www.greenpeace.org.uk/media/reports/energy-review-update-9>

(6) Guardian 2nd May 2007 <http://business.guardian.co.uk/story/0,,2070132,00.html>

(7) Telegraph 18th April 2007

<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2007/04/18/cxbloom18.xml>

(8) Edie 13th April 2007 http://www.edie.net/news/news_story.asp?id=12873&channel=0

(9) Bloomberg 17th April 2007 <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=al2CxeBwiEVc>

(10) FT 27th April 2007

http://www.ft.com/cms/s/5d3ced8c-f45b-11db-88aa-000b5df10621_i_rssPage=5b566934-3013-11da-ba9f-0000e2511c8.html

Forbes 27th April 2007 <http://www.forbes.com/business/feeds/afx/2007/04/26/afx3659886.html>

(11) Telegraph 27th April 2007

<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2007/04/27/cnge27.xml>

(12) Independent on Sunday 29th April 2007 <http://news.independent.co.uk/business/news/article2494118.ece>

3. Dounreay contamination - "one of the biggest clean-up challenges in the world"

There was great relief at Dounreay when the budget for the new financial year (07/08) was set at approximately £150 million - a slight increase on the previous year's funding - after earlier reports that up to 500 jobs were threatened as a result of the NDA's financial crisis caused mainly by problems at Sellafield. There are some huge decommissioning problems to be tackled at the North of Scotland site, which would almost certainly be hardly out of the news were it located further south.

For example, the UK Atomic Energy Authority (UKAEA) has started drilling up to 400 boreholes to isolate the notorious waste shaft and allow a cocktail of radioactive and chemical materials to be removed. Remotely operated equipment will be used to remove the shaft's contents, which will then be treated in new purpose-built plants, but no-one knows exactly what is in the shaft - there was unsupervised fly-tipping into the shaft and workers fired rifles at polythene bags floating on water in order to sink them, with no regard to the shaft's hazardous contents. Drums of sodium waste could cause a problem, it is hoped that the sodium has leaked out, otherwise it could explode on removal. UKAEA has described this as "*one of the biggest clean-up challenges in the world*". If all goes according to plan, the project could be completed within 20 years. UKAEA was fined £140,000 in Wick Sheriff Court for offences under the Radioactive Substances Act stretching back more than 40 years. Offences included releasing nuclear fuel particles from the site into the surrounding area between 1963 and 1984. Dounreay was also fined £2 million by the NDA after 266 litres of hazardous spent fuel was spilt onsite, leading to closure of the plant.

Local contamination continues unabated, as fragments of radioactive nuclear fuel continue to arrive on the beaches in Caithness around the Dounreay facility. The rate at which radioactive particles are being found on the beach has increased substantially, as has the radioactivity. In

April a particle was found on Murkle beach to the east of Thurso (Dounreay is to the west), during a radiation monitoring exercise by Nukem Ltd using a special tracked detection vehicle. Murkle was first checked in 2006 following the discovery of a particle on Dunnet beach (which is even further east) in March 2005, but nothing was found.

This was only the second particle to be found to the east of Dounreay, but hundreds have been found on the Dounreay foreshore and on the surrounding seabed. And 94 particles, including 17 this year, and a comparatively large, so far unidentified radioactive object, have been removed from Sandside beach, the privately-owned but publicly accessible beach at Sandside Bay near Dounreay. (1) Plans are now being drawn up to map the distribution of particles on the seabed offshore over the summer months using a remotely-operated vehicle. Since 1997 seabed surveys have been carried out using a towed radiation detection system as well as divers who have retrieved 929 particles in the process. But divers have now been replaced by a remotely-operated vehicle which has so far identified a further 204 particles.

The Scottish Environment Protection Agency (SEPA) has submitted reports to prosecutors about the contamination and has also apparently recently reviewed whether to close off Sandside beach to the public, but decided against the idea. However, it is difficult to escape the conclusion that contaminated beaches would not be tolerated elsewhere.

The UKAEA is in the process of deciding how to implement an acceptable clean up strategy, both onshore and offshore. Over the next few months a preliminary Best Practicable Environmental Option (BPEO) report will be published for public comment. Then UKAEA will make recommendations to the Scottish Environment Protection Agency and the Nuclear Decommissioning Authority in early 2008. (2)

Meanwhile Reay golf course is to be surveyed for radiation following concern that it could be contaminated by particles. The UKAEA has agreed to carry out a follow-up scan following an approach from landowner Geoffrey Minter. Mr Minter's family-run Sandside Estate includes the 18-hole golf course, which was previously monitored in 2002. Mr Minter is keen to establish whether any of the radioactive pollution washed up on Sandside beach has found its way on to the adjoining golf course. (3)

Sellafield

Further south, increased monitoring is to be carried out on beaches in Cumbria following the discovery of a particle of radioactive material at Braystones beach in 2003. The Environment Agency has made extra monitoring a requirement, and British Nuclear Group will be monitoring beaches between Drigg and St Bees over the summer. The work is expected to be completed by March 2008. (4)

(1) John O Groat Journal 18th April 2007 http://www.johnogroat-journal.co.uk/news/fullstory.php/aid/2005/Murkle_radioactive_particle_confirmed.html

(2) John O' Groat Journal 4th April 2007 http://www.johnogroat-journal.co.uk/news/fullstory.php/aid/1917/Particles_issue:_UKAEA_vows_'substantial_progress'.html

(3) John O'Groat Journal 20th April 2007 http://www.johnogroat-journal.co.uk/news/fullstory.php/aid/2026/Golf_course_to_be_surveyed_for_contamination_.html

Sandside Estate Press Release 17th April 2007 <http://www.sandsideestate.com/pressRelease.asp?releaseld=581>

(4) Carlisle News and Star 9th April 2007 <http://www.newsandstar.co.uk/news/viewarticle.aspx?id=485671>

Whitehaven news 12th April 2007

<http://www.whitehaven-news.co.uk/news/viewarticle.aspx?id=486429>

4. Hinkley and Hunterston may live longer

Repairs on boiler tubes have been completed at Hinkley Point B and Hunterston B, but there is still no sign of the stations re-opening. British Energy (BE) expected to start production at the stations at 70% capacity in April (1) but permission to re-start had still not been forthcoming by

the start of May. (2)

BE published the findings of the Nuclear Installations Inspectorate's (NII) Periodic Safety Review (PSR) of Hinkley and Hunterston on 1st May. The NII concluded that the issues arising from its PSR assessment are not immediate safety concerns; normal station operation can continue whilst a remedial programme of work is progressed. BE announced that it would invest £4.5m to meet safety standards at the two stations.

But the NII said the company's submission to the review had "*a number of significant shortfalls both in the quality and scope of information that is required by the UK regulatory system*". It mentions that "*a specific fire scenario (details withheld) should be investigated with due urgency*". The Inspectorate says: "*It is a challenging programme of work, and we have accepted [BE's] assurance that it can be carried out without adverse effects on other safety-related work*". If satisfactorily completed, no further safety review should be needed before January 2017. BE says it will now assess the accounting lives of the two stations and decide by March 2008 whether they should be extended beyond the current date of 2011. (3)

Campaigners from Stop Hinkley Expansion (SHE) branded the life extension outrageous. (4) They say that only last year the NII published documents saying Hinkley's cracked graphite reactor core prevented it being re-licensed as there was an increased risk of an accident with prolonged operation of the plant. (5) SHE campaigner, Jim Duffy, said "*the regulators have contradicted their own safety predictions which said that most reactor core bricks would have cracked during this review period, including some that will be cleaved in half. It's outrageous to grant a license to a reactor in this dangerous condition. No amount of money thrown at Hinkley can repair the crumbling reactor core which is too radioactive and inaccessible to work on.*"

(1) Bloomberg News 10th April 2007, <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aH2lvGIMB1rQ>
See also: Independent on Sunday 22nd April 2007

<http://news.independent.co.uk/business/news/article2470135.ece>

(2) Telegraph 28th April 2007

<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2007/04/28/cxbloom28.xml>

(3) Herald 2nd May 2007, <http://www.theherald.co.uk/business/news/display.var.1368757.0.0.php>

(4) Stop Hinkley Expansion Press Release 2nd May 2007, <http://www.stophinkley.org/pressrelpage.htm>

(5) <http://www.hse.gov.uk/foi/releases/hink2d.pdf>

5. Sellafield fined millions for safety breach - reprocessing delays

The Thermal Oxide Reprocessing Plant (THORP), the newest of Sellafield's two reprocessing plants, has been closed since 21st April 2005 because of the spillage of 18,000 litres of highly radioactive uranium and plutonium liquid waste which began seeping from a broken pipe around July 2004. The pipe then suffered a major fracture around January 2005. Although no radiation escaped, British Nuclear Group (BNG), the company operating Sellafield on behalf of the Nuclear Decommissioning Authority (NDA), should have been able to discover the leak "within days". Yet it continued undetected for around eight months.

A criminal case against BNG, brought by the Health & Safety Executive (HSE) was heard by the Crown Court in Carlisle in October 2006. BNG was fined £500,000 after pleading guilty. This was on top of a £2m penalty imposed on BNG by the NDA. In his judgement, Mr Justice Openshaw said the fact that the leak went undetected for eight months was "*a serious failing deserving of condemnation*". Two previous cases brought before the Crown Court, he said, showed that the defendants cannot reasonably claim to have a good safety record. The recent leak showed "*a significant departure from the relevant safety standard over a prolonged period of time and a failure to comply with important conditions concerned with safety.*"

The Nuclear Installations Inspectorate's (NII) report into the leak criticised management for "serious" breaches in regulations. NII said significant failings at the plant included staff ignoring alarms. NII highlighted a lack of a "*questioning attitude*" or "*challenge culture*" at the company. It

added: "The company fell well below the standard required by the licence conditions and these breaches amounted to serious offences."

Although BNG received consent from the NII to restart operations at THORP in January, this is still subject to satisfactory tests on an evaporator dealing with highly active waste, which are not expected to be completed until 'the middle of 2007'. (1) The Installation of a new (medium active waste) evaporator at Sellafield's THORP reprocessing plant will require the roof to be taken off so that the equipment can be lowered in. THORP is due to be re-opened in the summer and the new evaporator installed in November, but British Nuclear Group (BNG) says the plant will not have to be shut again for the evaporator to be installed. (1) Some operations have already resumed, allowing liquors, held in the plant since the shutdown, to be dealt with. But THORP has yet to receive formal permission from the NDA to fully re-start the plant. (2)

The NDA's Lifetime Plan for Sellafield, shows THORP operations finishing in March 2011. But with some 4,000 tonnes of contracted fuel (Overseas and British Energy) still to be reprocessed by that date, the plant faces the impossible challenge of reprocessing at almost double the rate it has averaged since operations commenced in 1994.

(1) Whitehaven News 5th April 2007 <http://www.whitehaven-news.co.uk/news/viewarticle.aspx?id=484185>

(2) Whitehaven News 19th April 2007 <http://www.whitehaven-news.co.uk/news/viewarticle.aspx?id=488932>

6. Sellafield contractors pull out

Two of the leading candidates vying to take over the £15bn-plus contract to manage and clean up Sellafield have pulled out less than two weeks after making it onto the shortlist. Energy Solutions and Jacobs Engineering, both American companies, said they want to focus on the Magnox reactor and other contract competitions, including the bid to manage the Drigg low-level nuclear dump. Four teams are now left in the race:

(a) a consortium made up of Serco, the British support services group who already co-manage Aldermaston - the UK's nuclear weapon design and manufacturing facility, Bechtel, and BWXT Nuclear Services UK

(b) Amec, in partnership with Washington Group International and Areva, the French reactor builder; (c) a consortium of Fluor and Toshiba, and;

(d) CH2M Hill of the US. (1)

The Nuclear Decommissioning Authority will issue invitations to tender later this year with a view to announcing the winner by the middle of next year.

Meanwhile, the trade union, Amicus, has expressed concern that nuclear safety could be threatened if BNFL's Project Services Division is sold to private equity buyers. Project services, which employs more than 700 people, looks after the equipment monitoring radiation safety and security for the Sellafield reprocessing centre, the old Magnox nuclear reactors. (2)

(1) Sunday Telegraph 15th April 2007

<http://www.telegraph.co.uk/money/main.ihtml?xml=/money/2007/04/15/cnsella15.xml>

Whitehaven News 12th April 2007 <http://www.whitehaven-news.co.uk/news/viewarticle.aspx?id=486452>

(2) Times 7th April 2007 http://business.timesonline.co.uk/tol/business/industry_sectors/utilities/article1624113.ece

Observer 8th April 2007 <http://observer.guardian.co.uk/business/story/0,,2052160,00.html>

Whitehaven News 12th April 2007 <http://www.whitehaven-news.co.uk/news/viewarticle.aspx?id=485554>

7. Nuclear waste – a partnership approach?

The Committee on Radioactive Waste Management (CoRWM) has submitted its report – Implementing a Partnership Approach to Radioactive Waste Management (1) after the Government asked for advice on communities, volunteering and a partnership-based approach. The advice is intended to assist the Government in drafting a new consultation, due to start in the

summer, on how to implement the Committee's July 2006 recommendations (2), and in particular how to identify a suitable site for managing wastes.

CoRWM's advice covers three main areas:

- (a) Defining communities and how they can express willingness to participate in the siting processes;
- (b) Setting up and operation of local partnerships through which measures to enhance community well-being could be negotiated; and
- (c) Indicating the way in which a staged decision process might operate to the point at which availability of a repository is confirmed.

Get the process right

The most important single message from CoRWM to Government is that it is critical to take enough time to get the very earliest stages of the implementation process right. Failure to conduct these effectively and transparently could set the process back substantially. Rushing ahead with a few nuclear communities would revive recollections of past processes which failed. (3)

CoRWM says the forthcoming Managing Radioactive Waste Safely (MRWS) consultation should be at least double the length of conventional three-month consultations, and engage with a wider range of participants, including members of the (non-aligned) public, (through Citizens' Panels for example) in order for the results to carry the legitimacy needed. Regrettably the Government is reported to be planning only a three month consultation, and even this will be over the summer-holiday period. (4)

Waste storage should still be central

Crucially, CoRWM says, whilst the consultation will obviously focus mainly on the siting of a deep repository, it also needs to ensure that "*the whole package of CoRWM recommendations is also canvassed properly*", especially consideration of "*the need for and implications of robust storage (especially the extent to which willingness to participate should apply to storage facilities) and the nature of the necessary R&D to reduce uncertainties of all kinds*".

CoRWM says "*the potentially willing community should be the smallest coherent unit that can be shown to express a willingness to participate*" – for example a few contiguous parishes, and draws attention to widespread scepticism about the capacity of local government to represent community views, although a larger authority is presumed to approve any well-substantiated proposals put forward by a smaller community. This is where its advice differs significantly from the Local Government Association's Nuclear Legacy Advisory Forum's (NuLeaf) advice which emphasises the need for elected representatives to decide about volunteering, after wide consultation. (5)

CoRWM recommends a partnership approach, which means establishing an open and equal relationship between the implementing body and the potential host communities. This will require '*involvement packages*' (funding) to enable communities to participate, and '*community packages*' which would be developed by the partnership to "*ensure the well-being of the community is enhanced*".

Nirex – NDA merger

Meanwhile, *The Whitehaven News* reports that moves to ask if Cumbrians will be 'volunteering' will accelerate now that the Nuclear Decommissioning Authority (NDA) has taken over all the work and many of the staff from Nirex. A new Directorate has been established within the NDA – the Radioactive Waste Management Directorate (RWMD) – which is headed by Richard Waite, previously NDA's Engineering Director. (6)

The NDA - Nirex merger went ahead despite legal advice received by Nirex in October 2006 which said the NDA should not be involved in the site selection process for a repository, because it owns many nuclear sites, including the previous repository site in West Cumbria. A new

proposal to build a repository in West Cumbria would give the clear impression of a 'done deal'. Counsel's advice was that this could be open to legal challenge. (7)

Mayor volunteers only to be kicked out of office

Meanwhile in Japan, where the government is desperately looking for a site to accommodate a growing volume of radioactive waste, and has been seeking a volunteer community for a number of years, the municipality of Toyo in Kochi Prefecture, applied to start the process to see if the town would be a suitable site. This first stage alone would bring up to 2 billion yen in subsidies to the town and neighboring municipalities. However, in April, Mayor Tashima lost an election, which was seen very much as a referendum on the nuclear waste issue, to a candidate opposed to hosting a nuclear waste dump. (8)

(1) Implementing a Partnership Approach to Radioactive Waste Management – Report to Government, CoRWM, April 2007 <http://www.corwm.org/pdf/2146%20-%20%20Report%20to%20Government%202007%20-%20final.pdf>

(2) CoRWM's Final Report, July 2006. <http://www.corwm.org/pdf/FullReport.pdf>

(3) See "History of Nuclear Waste Disposal Proposals in Britain"

http://www.no2nuclearpower.org.uk/reports/waste_disposal.php

(4) Renewal and Regeneration News 17th April 2007

<http://www.regen.net/pp/news/index.cfm?fuseaction=FullDetails&articleUID=6dcdaec8-1c6c-4cf3-abc4-9c10927a69f7&newsid=650821>

(5) Developing the implementation framework: initial invitations and local decision-making about participation, NuLeaf

Briefing Paper 4, 13 February 2007 http://www.eastspace.net/nuleaf/documents/2007-02-13_Initial_invites_and_responses_Briefing_Paper_4.pdf

(6) Whitehaven News 5th April 2007 <http://www.whitehaven-news.co.uk/news/viewarticle.aspx?id=484263>

(7) The Nirex legal advice was obtained by Greenpeace under the Freedom of Information Act. It is available on request.

(8) Japan Times 23rd April 2007 <http://search.japantimes.co.jp/rss/nn20070423a5.html>

8. Uranium supplies

China says nuclear power is not the long-term answer to its energy needs due to limited global supplies of uranium and problems with nuclear waste disposal. It is planning to set up a strategic uranium reserve and plans to build as many as three new nuclear power plants annually over the next 10 years. But this expansion is only a "transitional replacement" of the country's heavy reliance on coal and oil. The future for China lies in more efficient use of fossil fuels and expansion of renewable energy. (1)

Limited supplies of fuel for nuclear power plants may thwart the renewed reactor building in the United States according to an MIT expert on the industry. Over the past 20 years, nuclear reactors have been fuelled from government stocks, which are now nearly gone. Worldwide, current uranium production meets only about 65 per cent of today's reactor requirements, says Thomas Neff, a research affiliate at MIT's Centre for International Studies.

Currently, much of the uranium used by the United States is coming from mines in Australia, Canada, Namibia and Kazakhstan, but half its fuel comes from Russia where it is surplus to requirements as nuclear weapons are dismantled. A disarmament deal is converting about 20,000 Russian nuclear weapons into fuel for US nuclear power plants but it ends in 2013, leaving a substantial supply gap for the US. (2) Despite an agreement that gave a private-sector consortium led by Cameco the right to buy and market most of the Russian uranium and set up a system of quotas that resembled the rising output of a new uranium mine, it is doubtful the US has prepared for the day when Russian supplies of weapons-grade uranium run out. (3)

With uranium prices reaching record levels (4), many in the media have been blaming the so-called nuclear renaissance, but most countries discussing a nuclear revival are still a long way from inserting fuel rods into new reactors. So while prices are rocketing because of nuclear expansion plans, particularly in China and India, a number of other factors are also to blame.

In early April ERA, which is controlled by Rio Tinto Zinc, said production from its Ranger mine in the Australian Northern Territory would fall between 25% and 35% next year from its 2006 level because of flood damage at the mine and processing plant. (5) The Cigar Lake uranium project in

Canada was also flooded last October, pushing back its opening by two years. Cigar Lake is expected to produce about 15% of global supply but not now until 2010.

Buying by hedge funds and speculators has also pushed the price up. (6) The World Nuclear Association says that restocking by utilities, and buying for new reactors are also applying pressure. It expects 48 new nuclear power reactors to be operating by 2013, principally in China, India and Russia. (7)

Australia took a small step towards boosting uranium supplies on 28th April when the opposition Labor party voted narrowly to abandon its long-standing 'no new uranium mines' policy at its annual conference. The "three mines" policy, introduced in 1984, has restricted uranium production to three specific sites. The move is significant because, although the Liberal party leads the federal government, mining permits are handled by state governments, all of which are under Labor control. (8) The Australian Conservation Foundation (ACF) has vowed to vigorously contest any expansion. ACF Executive Director, Don Henry, said "*the advocates of expanded uranium mining and export have failed to come up with answers to the problems of safety, waste, weapons, terrorism and widespread community concern ... the ALP has scored a stunning own goal, but it has not delivered a free kick to the uranium industry*". The Western Australian and Queensland Premiers have re-affirmed their states' opposition to uranium mining. (9)

Meanwhile, reprocessors are waiting in the wings. British Nuclear Group (BNG) has welcomed news that uranium prices have jumped to their highest levels for 40 years. Sellafield spokeswoman Ali McKibbin said: "Any uranium price hike reinforces the importance of reprocessing spent nuclear fuel and the benefit of recycling uranium into new fuel". An odd comment when both Sellafield reprocessing plants will probably be closed in six years. (10)

Labour and materials in short supply too

Besides uranium, in the US at least, the supply of materials and labour would be a problem for an expansion of nuclear power, according to a Council on Foreign Relations. The US now has 103 operating power reactors. CFR, an independent, non-partisan Washington think-tank says the US would have to open a new reactor every four to five months over the next 40 years just to replace the existing fleet. For that reason alone, it said, nuclear power won't be a major part of the solution for at least the next 50 years. (11)

(1) Sustainable Development International 24th April 2007

<http://www.sustdev.org/index.php?option=content&task=view&id=1808>

AFP 23rd April 2007 http://news.yahoo.com/s/afp/20070423/sc_afp/chinaenergyenvironment_070423053440

(2) Engineer Live 20th April 2007 <http://www.engineerlive.com/news/17505/lack-of-fuel-may-limit-us-nuclear-power.shtml>

(3) FT 9th April 2007 <http://www.ft.com/cms/s/6548409a-e636-11db-9fcf-000b5df10621.html>

(4) Times 18th April 2007 <http://business.timesonline.co.uk/tol/business/markets/article1669029.ece>

(5) FT 13th April 2007 <http://www.ft.com/cms/s/33fa8d6c-e95c-11db-a162-000b5df10621.html>

(6) Sunday Telegraph 8th April 2007

<http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2007/04/08/cnurasia08.xml>

Times 9th April 2007 http://business.timesonline.co.uk/tol/business/industry_sectors/utilities/article1629374.ece

(7) Times 9th April 2007 http://business.timesonline.co.uk/tol/business/industry_sectors/utilities/article1629373.ece

(8) FT 28th April 2007 <http://www.ft.com/cms/s/76bb5ad2-f4e2-11db-b748-000b5df10621.html>

(9) ACF Press Release 29th April 2007 http://www.acfonline.org.au/articles/news.asp?news_id=1239

(10) Whitehaven News 19th April 2007 <http://www.whitehaven-news.co.uk/news/viewarticle.aspx?id=488932>

(11) <http://www.cfr.org/content/publications/attachments/NuclearEnergyCSR28.pdf>

9. Whitehall moves - Energy & DTI restructure on the cards

Gordon Brown is "seriously considering" creating a super-ministry covering energy and the environment, which would pave the way for the potential break-up of the Department of Trade and Industry. (1) But the idea hasn't gone down too well with business leaders. The CBI said transferring responsibility for energy policy from the Department of Trade and Industry to an

environmental ministry that did not give equal weight to economic priorities would be a "red line" for business. (2)

(1) FT 10th April 2007 <http://www.ft.com/cms/s/db97be14-e6d2-11db-9034-000b5df10621.html>

(2) FT 12th April 2007 <http://www.ft.com/cms/s/945ee6fa-e892-11db-b2c3-000b5df10621.html>

10. Body Parts Scandal

Secretary of State for Trade and Industry Alistair Darling told the House of Commons that the available documents on 65 deceased Sellafield employees did not indicate whether organs taken from their bodies were removed with their families' consent. (1) He asked Michael Redfern QC, who conducted the inquiry into the removal of organs from children at the Alder Hey Children's Hospital in Liverpool, to investigate. (2)

Jean McSorley, a Greenpeace nuclear consultant, whose father died at the Sellafield nuclear reprocessing plant from a heart attack at the age of 39 in 1962, condemned the secretive nature of the nuclear industry today. She says his body was taken for an autopsy without his family's consent. She called for the inquiry to look into hundreds of deaths in the industry. In 1977, the UK Atomic Energy Authority, McSorley's employer, said there was no health risk involved in working at Sellafield. She says the scandal will damage the government's bid to build a new generation of nuclear power plants. *"It is going to raise an issue in the public mind about how this industry works. It shows that, as late as the 1990s, it was operating without due process. Openness and transparency and the nuclear industry are mutually exclusive. They are always looking for [a] reason not to be fully open with the public."* (3)

The Guardian pointed out that this new nuclear scandal was just in time for the 50th anniversary of the Windscale fire when fuel melted, fuel cans burst, uranium was ignited and radioactive iodine 131 was released through the cooling chimneys. (4) Since the inquiry was first announced it has been widened to cover cases at Harwell, Aldermaston, Springfields and Capenhurst, and may eventually cover other sites as well. (5)

(1) Times 19th April 2007 http://www.timesonline.co.uk/tol/comment/leading_article/article1674247.ece

(2) BBC 18th April 2007 http://news.bbc.co.uk/1/hi/uk_politics/6565409.stm

(3) Guardian 19th April 2007 <http://politics.guardian.co.uk/homeaffairs/story/0,,2059983,00.html>

(4) Guardian 19th April 2007 http://commentisfree.guardian.co.uk/john_harris/2007/04/the_nuclear_reaction_1.html and BBC http://news.bbc.co.uk/onthisday/hi/dates/stories/november/8/newsid_3181000/3181342.stm

(5) Daily Mail 26th April 2007

http://www.dailymail.co.uk/pages/live/articles/news/news.html?in_article_id=450910&in_page_id=1770&ito=newsnow

11. Chernobyl's 21st anniversary

A letter from various Chernobyl children's charities on the 21st anniversary of the nuclear disaster (1) reminds us that many of the young people who have grown up in Chernobyl's shadow have little cause to celebrate their "coming of age". The children's cancer hospital in Minsk is overcrowded with babies and small children diagnosed with leukaemia or other cancers. The children's hospice is overwhelmed with new patients, the majority of them babies with genetic disorders. And doctors are baffled by the blood diseases, normally associated with old age, that they are seeing in young children, the numbers of children with heart disease, respiratory problems or endocrine disorders, and the rising tide of breast cancer in young women.

(1) Guardian 23rd April 2007 <http://www.guardian.co.uk/letters/story/0,,2063291,00.html>

12. Free energy audits

Every household in Britain should be visited and given free expert advice on how to cut energy use, according to the Institute for Public Policy Research (IPPR). (1) The "energy audits" would

shave an average £230 off domestic gas and electricity bills and reduce harmful emissions by 30 million tonnes per year. (2)

(1) Scotsman 7th May 2007 <http://thescotsman.scotsman.com/business.cfm?id=704372007>

(2) IPPR Press Release 7th May 2007 <http://www.ippr.org.uk/pressreleases/?id=2692>