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**1. Reactor Designs up the Creek?**

Rumours of the death of the two reactor-types under consideration for new reactors in the UK – the European Pressurised water Reactor (EPR) and the Advanced Passive (AP) 1000 - could well turn out to be greatly exaggerated.

French business newspaper, La Tribune, said on 13<sup>th</sup> November that Hervé Machenaud, executive committee member of EDF had hinted the company could drop the EPR, because of problems at Olkiluoto, Flamanville and now Taishan in China. It sounds like he didn't mean in the very near future though because he also said EDF is hoping to start building an EPR in Britain soon, and EDF will use the EPR until it has another model available. It is working on an alternative 1,000MW design with the Chinese utility, CGNPC. (1)

EDF later denied it is thinking of ditching the EPR – it said it is committed to building several EPRs in the UK. (2) Both the Finnish and French projects are paying the price for being prototypes according to Claude Jaouen, vice-president in charge of reactors and services at Areva. These "First-of-its-kind effects" were a big issue he said. The main problems were design and the supply chain – which had to be constructed, as no reactor had been built in Europe for 20 years – and the amount of documentation that had to be produced. Jaouen insists that "*things won't be the same at all*" with EDF's planned reactors in the UK. Not only will Areva have the experience of projects in Finland, France and China, but the licensing process for the design is different and will be finalised earlier. (3)

On the upside EDF Energy says it will not set a firm date for completion of its first new nuclear power plant in Britain until it makes its final investment decision at the end of 2012 – and, of course

the problems at Flamanville, Olkiluoto and Taishan must at least have EDF wondering whether it is going down the right road. *The Telegraph* reports the first of the new plants will not be built until 2019 because of extra safety checks following Japan's atomic disaster. Ministers originally hoped to get the first nuclear power station built by 2017, before revising this to 2018. Now there has been a further slippage, with the first station at Hinkley not expected until nearer the end of the decade, but it confirms that EDF has refused to give a "firm and final completion date" for nuclear power. A spokesman for the company said the 2019 date was only "indicative". (4)

Dow Jones says EDF is taking time to evaluate the consequences of delays at the Flamanville reactor. (5) *Les Echos* reports that EDF is waiting for various crucial aspects of Electricity Market Reform to be decided. (6)

The Office for Nuclear Regulation (ONR) and Environment Agency (EA) expect to issue interim design acceptance confirmations (iDAC), and interim statements on design acceptability (iSODA) for the two designs – the EPR and AP1000 – by the end of 2011. A list of GDA Issues identifying outstanding matters that need to be addressed before the regulators will provide a Design Acceptance Confirmation (for the ONR) or Statement of Design Acceptability (EA) will also be issued. A full DAC and SODA may be issued for the UK EPR by the end of 2012, but Westinghouse has decided to request a pause in the GDA process for the AP1000 pending customer input to finalizing it. (7) Westinghouse says the work being put on hold is "low risk", but substantial and therefore expensive. (8)

Rumours that RWE is considering pulling out of the Horizon consortium with Eon have added to the suspicion that the AP1000 is dead. But RWE has been busy denying these rumours and Horizon says its activity is being ramped up significantly, and it will decide at the end of 2011 which kind of reactor to build at Wylfa. There have also been rumours that Eon is ready to quit. (9)

The FT reported in October that Horizon had held discussions with both Toshiba and Areva about selling a 25% stake in the proposed reactor project. (10) Horizon is said to be examining rival offers from Toshiba and Areva – this includes examining the reactor type and potentially any equity stake offer made by the reactor builders. According to *Construction News* the AP1000 is believed to be the front runner for selection for the Wylfa plant being developed by Horizon (11)

*The Times* also reports that the Japanese state-controlled export credit agency JBIC has promised to underwrite a €5 billion (£4.3 billion) capital-raising by Toshiba. If its bid is successful, Toshiba will inject money into Horizon. *The Times* also says Toshiba, is understood to be the favourite to win the Horizon bid because Areva is struggling to complete Flamanville and is short of cash. (12)

Jacobs Engineering Group Inc. has just been awarded an extension to its current marine environmental services contract from Horizon Nuclear Power Ltd for Wylfa – hardly the sort of contract you would award if you were about to give up on the project. (13)

In the US, the AP1000 Oversight Group, Friends of the Earth and the North Carolina Waste Awareness and Reduction Network, NC WARN have petitioned the Nuclear Regulatory Commission to withhold certification for the AP1000 until flaws in its design exposed by Japan's nuclear disaster are resolved. The groups filed a legal motion petitioning the NRC to require the resolution of design issues with the Westinghouse-Toshiba AP1000 nuclear reactor before the certification of the reactor's design and operating procedures. (14)

(1) <http://www.latribune.fr/entreprises-finance/industrie/energie-environnement/20111113trib000663723/en-pleine-polemique-sur-flamanville-edf-se-prepare-a-abandonner-l-epr.html>

(2) Market Watch 14<sup>th</sup> Nov 2011  
<http://www.marketwatch.com/story/edf-denies-it-mulls-dropping-epr-reactor-model-2011-11-14>

- (3) FT 2<sup>nd</sup> December 2011 <http://www.ft.com/cms/s/0/60f05246-167c-11e1-be1d-00144feabdc0.html>
- (4) Telegraph 2nd Dec 2011 <http://www.telegraph.co.uk/earth/energy/nuclearpower/8929756/Setback-to-nuclear-power-plans.html>
- (5) Dow Jones 28th Oct 2011  
<http://www.foxbusiness.com/industries/2011/10/28/edf-delays-construction-4-nuclear-reactors-in-uk/>
- (6) Les Echos 28th Oct 2011 <http://www.lesechos.fr/entreprises-secteurs/energieenvironnement/actu/0201718170685-nucleaire-edf-suspend-le-calendrier-de-ses-projets-d-epr-auroyaume-uni-240900.php>
- (7) World Nuclear Association 3rd Aug 2011 <http://www.world-nuclear.org/info/inf84.html>
- (8) Professional Engineering 15<sup>th</sup> Nov 2011 <http://profeng.com/news/new-nuclear-should-go-ahead-as-planned>
- (9) This is Money 1<sup>st</sup> 6<sup>th</sup> Oct 2011 <http://www.thisismoney.co.uk/money/markets/article-2049871/Nuclear-bombshell-hits-E-ON-energy-project.html>
- (10) FT 25<sup>th</sup> Oct 2011 <http://www.ft.com/cms/s/0/3f65ec3a-ff1b-11e0-9b2f-00144feabdc0.html>
- (11) Construction News 15<sup>th</sup> September 2011 <http://www.cnplus.co.uk/westinghouse-confirms-position-of-uk-nuclear-consortium-partners/8619890.article>
- (12) Times 9<sup>th</sup> November 2011  
<http://www.thetimes.co.uk/tto/business/industries/utilities/article3220611.ece>
- (13) The Engineer 24<sup>th</sup> November 2011 <http://www.theengineer.co.uk/channels/process-engineering/contracts-and-projects-tracker-november-2011/1000183.article>
- (14) Environment News Service 11<sup>th</sup> Nov 2011 <http://www.ens-newswire.com/ens/nov2011/2011-11-11-091.html>

## 2. Plutonium – the madness continues

The UK Government has decided it will probably go for a second MoX plutonium fuel fabrication plant at Sellafield, although GE Hitachi would like to build a fast breeder reactor instead. The newest reprocessing plant at Sellafield will continue adding to the embarrassing plutonium stockpile until 2018 as the NDA's liabilities jump up to more than £100bn.

The UK Government has been struggling for some time with what to do about its embarrassing stockpile of around 100 tonnes of plutonium. Most environment groups argue that immobilisation of the plutonium and its treatment as a waste is the most sensible policy. (1) All immobilization options should be investigated further and tested against environmental principles, including in particular proliferation resistance, and other criteria such as cost, dose levels to the work force and so on. Building a new plutonium-burning reactor or MoX fuel fabrication plant will simply make the problem worse because spent MoX fuel is much hotter than spent conventional fuel.

The Nuclear Decommissioning Authority (NDA) and the chief scientist at the Department for Energy and Climate Change (Decc), Professor David MacKay, both asked for technical and financial details of an American-designed fast reactor that can 'burn up' the plutonium as nuclear fuel. (2) Now GE Hitachi (GEH) is offering to build a plutonium-fuelled fast breeder reactor at Sellafield - home to most of the plutonium stockpile which has been separated from spent nuclear waste fuel in the two reprocessing plants located there. According to *The Sunday Times* one senior industry source said GEH's Prism Reactor "...is a more attractive proposition than building a new Mox plant." (3)

GEH says the 600MW reactor would operate for 60 years, but some nuclear experts estimate that the cost of building and operating the reactor would be 50% higher than a conventional new nuclear reactor. GEH argues the proposal offers better value for money than Areva's plan to build a Mox fuel fabrication, which would cost about £500 million to build. GEH says a fast reactor could use all the plutonium at Sellafield whereas a Mox plant might not be able to process about a quarter of the stockpile because of impurities in the plutonium. GEH also claims its plan would be cheaper for the taxpayer. (4) (There is no mention of the cost of building a plant to fabricate fuel for a Prism Reactor).

Some nuclear experts contacted by *The Guardian* were sceptical about GE's proposals, pointing out the company had provided little data on which to assess its credibility as a solution to the UK's plutonium stockpile, and that government-sponsored research into the available options had suggested that a mixed oxide plant was the best option. The Prism reactor works by taking the existing plutonium oxide powder in cans, and converting it to metal. That metal is in turn converted into an alloy and mixed with uranium and zirconium, which is put into a fuel bundle and used in a fission reactor. After the fuel is spent, the waste product that is left would be less of a proliferation risk than the plutonium. GEH would not say how much the plant would be likely to cost, or how much profit it could make, but said the investment would be "multibillion" if it went ahead. (5)

According to George Monbiot this technology "*ticks all the green boxes: reduce, reuse, recycle.*" He says GEH told the UK government it could build a fast reactor within five years to use up the waste plutonium at Sellafield, and if it doesn't work, the UK won't have to pay. The current proposal, he says, doesn't include a new reprocessing plant. It should. Monbiot says a new MoX Plant will produce a fuel hardly anyone wants while generating more waste plutonium than we possess already. "*I suggest we take the radical step of using science, not superstition, as our guide.*" (6)

Bloomberg says GEH claims a Prism reactor would be able to use up 100 tonnes of plutonium over its 60 year life. (7) Senior government advisers have been in discussions with GEH about its Prism fast reactor but the Government says that, unlike fast reactors, Mox fuel is not a pioneering technology and so does not carry the risks associated with fast reactors. If a commercial partner were prepared to take on the risks, the Government says it would consider the possibility of building a nuclear fast reactor to deal with the plutonium stockpile. (8)

Meanwhile, the Department of Energy and Climate Change (DECC) has published the conclusions of its consultation on the long term management of UK-owned separated civil plutonium which confirms the Government's preliminary view that a new MoX Plant should probably be built. The Government says it doesn't have sufficient information yet to make a specific decision to proceed with procuring a new MOX plant. Only when the Government is confident that its preferred option could be implemented safely and securely, that is affordable, deliverable, and offers value for money, will it be in a position to proceed. (9) Although Mr Hendry made it clear the Government sees the "Mox option" as a priority, it is not certain that a new £3bn plant to convert the plutonium into Mox fuel will ever be built. Mindful of the financial and technological disaster of the current Mox fuel plant at Sellafield, which has cost £1.34bn and produced a tiny fraction of the fuel it was scheduled to make, Mr Hendry said that a clear case has still to be made for a second Mox plant at Sellafield. (10)

Greenpeace dismissed the plan as "*crazynomics*" that would lead to public money being spent to "*fund the nuclear industry gravy train*". (11) Doug Parr said "*This proposal will lead to a subsidised plant creating subsidised fuel so that subsidised operators can produce subsidised electricity and then receive subsidised waste disposal. The only winners in this are the nuclear operators, already rich with their 18% domestic fuel price rises this year.*" (12)

Unwilling or incapable of learning from the UK's disastrous MOX fuel experiences, CORE branded it a '*decision made in the dark that yet again puts the proverbial cart before the inevitable nuclear white elephant*'. (13) The weakness of the Nuclear Decommissioning Authority's case for the re-use of plutonium as MOX has undoubtedly prevented the Government from going 'the whole hog' and putting its weight behind the construction of a new MOX plant at Sellafield. The Government however suggests that the construction of a new MOX plant could begin around 2019 with the first MOX fuel being fabricated in 2025.

Plutonium is still considered to be a zero-rated asset, as opposed to a liability, so any of the costs of dealing with the plutonium will have to be added to the UK growing legacy waste liability bill. The NDA's liabilities have just jumped by around a quarter to more than £100bn because of the complex work to make safe highly toxic waste storage ponds and silos at Sellafield will cost much more and

take longer than thought. The NDA has made this estimate on an undiscounted basis, which is how much the work would cost if it was done tomorrow. (14)

Meanwhile the NDA has announced there will be no new business for Thorp after it finishes its present contracts in 2018. The NDA has been investigating whether the current strategy for managing our oxide fuels (from AGRs) compared to other credible alternatives, remains the most cost-effective means. The review has concluded that completion of the reprocessing contracts in Thorp remains the most viable and cost effective option. Any remaining fuels will be placed into storage pending disposal in a geological disposal facility. (15) CORE's briefing explains why the NDA has decided not to close THORP sooner or extend its life. (16)

- (1) See NFLA submission to the Plutonium Management Consultation dated 6<sup>th</sup> May 2011 [http://www.nuclearpolicy.info/docs/radwaste/Radioactive\\_Waste\\_Briefing\\_28\\_Plutonium\\_consultation.pdf](http://www.nuclearpolicy.info/docs/radwaste/Radioactive_Waste_Briefing_28_Plutonium_consultation.pdf)
- (2) Independent 28th October 2011 <http://www.independent.co.uk/environment/green-living/new-life-for-old-idea-that-could-dissolve-our-nuclear-waste-2376882.html>
- (3) Sunday Times 27<sup>th</sup> Nov 2011 [http://www.thesundaytimes.co.uk/sto/business/energy\\_and\\_environment/article830837.ece](http://www.thesundaytimes.co.uk/sto/business/energy_and_environment/article830837.ece)
- (4) Times 1<sup>st</sup> Dec 2011 <http://www.thetimes.co.uk/tto/business/industries/utilities/article3244114.ece>
- (5) Guardian 30th Nov 2011 <http://www.guardian.co.uk/environment/2011/nov/30/ge-hitachi-nuclear-reactor-plutonium>
- (6) Guardian 5th Dec 2011 <http://www.guardian.co.uk/commentisfree/2011/dec/05/sellafield-nuclear-energy-solution>
- (7) Bloomberg 30<sup>th</sup> November 2011 <http://www.bloomberg.com/news/2011-11-30/ge-hitachi-propose-plant-to-burn-u-k-s-plutonium-stockpile.html>
- (8) Independent 2nd Dec 2011 <http://www.independent.co.uk/news/uk/politics/government-takes-3bn-gamble-on-nuclear-waste-6270911.html>
- (9) DECC 1st December 2011 [http://www.decc.gov.uk/en/content/cms/news/ch\\_nuclearmatt/ch\\_nuclearmatt.aspx](http://www.decc.gov.uk/en/content/cms/news/ch_nuclearmatt/ch_nuclearmatt.aspx)
- (10) Independent 2nd Dec 2011 <http://www.independent.co.uk/news/uk/politics/government-takes-3bn-gamble-on-nuclear-waste-6270911.html>
- (11) Times 2<sup>nd</sup> Dec 2011 <http://www.thetimes.co.uk/tto/business/industries/utilities/article3245346.ece>
- (12) Guardian 1<sup>st</sup> Dec 2011 <http://www.guardian.co.uk/environment/2011/dec/01/mox-u-turn-stuns-nuclear-campaigners>
- (13) CORE Press Release 2<sup>nd</sup> Dec 2011 <http://www.corecumbria.co.uk/newsapp/pressreleases/pressmain.asp?StrNewsID=297>
- (14) Times 4<sup>th</sup> Dec 2011 <http://www.thetimes.co.uk/tto/business/industries/utilities/article3247657.ece?lightbox=false>
- (15) Whitehaven News 24<sup>th</sup> Nov 2011 <http://www.whitehavennews.co.uk/news/no-new-business-for-thorp-1.900268?referrerPath=news>
- (16) Cumbrians Opposed to a Radioactive Environment Briefing 24<sup>th</sup> Nov 2011 <http://www.corecumbria.co.uk/newsapp/pressreleases/pressmain.asp?StrNewsID=296>

### 3. Plutonium Transports Approved

The proposal to move “breeder material” by train from Dounreay to be reprocessing in the old Magnox reprocessing plant at Sellafield has been approved by the Nuclear Decommissioning Authority (NDA). (1) Trains are to start moving next summer. (2) Forty-four tonnes will be moved in about 40 journeys between Scotland and Cumbria. The NDA will now need regulators to approve the plans before they start moving the nuclear fuel. (3)

The material which formed the uranium-238 blanket in the Prototype Fast Reactor at Dounreay is not thought to be terribly radioactive, but there is concern the plutonium formed by the neutron bombardment of the uranium could be a prime target for theft.



The NDA says the exact timing of the trains and security measures will remain confidential. Dounreay's other materials containing plutonium are the subject of an NDA assessment of how best to manage them. One of the options is to transport yet more to Sellafield. The NDA is expected to publish a paper on the assessment early next year. (4)

Meanwhile, Roger Brunt, who was director of civil nuclear security with the Office for Nuclear Regulation, says the economic crisis has triggered a significant increase in the number of nuclear workers vulnerable to bribes. A growing numbers of workers vetted for national security reasons have run into financial difficulties, and had their clearances reviewed. In a report to ministers covering 2009-11, Brunt also expressed concern about the vetting of foreign workers. He disclosed a problem with the security of nuclear information, and said that the proportion of nuclear police who were armed had risen. (5)

- (1) STV 21<sup>st</sup> November 2011 <http://news.stv.tv/scotland/highlands-islands/281153-trains-will-transport-nuclear-fuel-from-dounreay/>
- (2) BBC 21<sup>st</sup> Nov 2011 <http://www.bbc.co.uk/news/uk-scotland-highlands-islands-15825467>
- (3) Scotsman 22nd Nov 2011 [http://www.scotsman.com/news/transport/dounreay\\_nuclear\\_fuel\\_set\\_to\\_be\\_taken\\_from\\_scotland\\_by\\_train\\_1\\_1978061](http://www.scotsman.com/news/transport/dounreay_nuclear_fuel_set_to_be_taken_from_scotland_by_train_1_1978061)
- (4) BBC 22nd Nov 2011 <http://www.bbc.co.uk/news/uk-scotland-highlands-islands-15836192>
- (5) Rob Edwards 21st Nov 2011 <http://www.robbedwards.com/2011/11/more-nuclear-workers-risk-being-bribed-warns-security-watchdog.html>

#### **4. Hinkley moves to next stage**

The Infrastructure Planning Commission (IPC) has decided to accept the Hinkley Point nuclear power station application, made by EDF Energy. (1) This led to the publication of the application documentation in full. Make space on your computer - it runs to 4,700 megabytes of data. (2)

Anyone who wants to be able to make submissions to the IPC regarding Hinkley C needs to register with the IPC. The registration period is only open until 23<sup>rd</sup> January. Unless you register by then, you will have no voice in the IPC's deliberations. (3)

Last month, councils in the area said tthe promoters of Hinkley could have done more to involve local people in debate over the project. In a joint report submitted to the IPC, Somerset County Council and Sedgemoor and West Somerset District Councils agreed that EDF Energy generally carried out the consultation activities promised before lodging its development consent order last month. However, they said the energy company could have done more to engage with hard-to-reach groups in Bridgwater. They also voiced concern about the quality of some information presented for consultation and a lack of detailed evidence on some topics. (4)

Meanwhile Innovia Cellophane Ltd lost their judicial review against the Infrastructure Planning Commission's (IPC's) decision to grant the NNB Generation Company Ltd (80% EDF Energy and 20% Centrica) permission to survey land it owned. (5)

Stop Hinkley Campaigners were joined by Wells Liberal Democrat MP Tessa Munt, and Caroline Lucas, the leader of the Green Party to hand in a petition to 10 Downing Street with almost 13,000 signatures. (6)

- (1) Bircham, Dyson & Bell 24<sup>th</sup> November 2011 <http://www.bdb-law.co.uk/blog/anguswalker/298-ipc-accepts-hinkley-point-c-application-and-other-nsip-news>
- (2) Documentation available at: <http://infrastructure.independent.gov.uk/projects/south-west/hinkley-point-c-new-nuclear-power-station/documentation/?ipcdocsec=app>
- (3) IPC: <http://infrastructure.independent.gov.uk/projects/south-west/hinkley-point-c-new-nuclear-power-station/>

- (4) Planning 24<sup>th</sup> Nov 2011 <http://www.planningresource.co.uk/Energy/article/1106038/ipc-accepts-hinkley-nuclear-application-examination/>
- (5) Bircham Dyson Bell 7<sup>th</sup> November 2011 <http://www.bdb-law.co.uk/blog/anguswalker/293-ipc-wins-hinkley-point-judicial-review>
- (6) Western Daily Press 7<sup>th</sup> Dec 2011 <http://www.thisissomerset.co.uk/story-14068863-detail/story.html>

## 5. Carbon Plan

The government has set out a wide-ranging package of measures designed to ensure cuts in greenhouse gas emissions by half by 2025. The Carbon Plan reveals the UK will 'significantly exceed' the emissions target of a 34% cut set for 2020 under the Climate Change Act. The plan also outlines how meeting 2050 targets could be cheaper than taking no action. (1)

According to the plan, between 40GW and 70GW of new low-carbon electricity capacity is required by 2020, including three to five twin nuclear reactor stations similar to that proposed for Hinkley Point C and a three- to five-fold increase in renewable energy capacity. According to DECC's calculator, a balanced 2050 energy mix consisting of 33GW of nuclear, 45GW of renewables and 28GW of fossil fuels with CCS is estimated to save £84 per person each year. Moreover, under the scenario, energy use will be halved, mainly owing to more efficient technologies, while the likelihood of high fossil fuel prices will increase savings further. (2)

While the plan makes the economic case for shifting to a low carbon economy, it admits that there is considerable uncertainty over the cost of such a transition, predicting that the economic impact of meeting the ambitious fourth carbon budget – a 50% cut in emissions by 2025 - agreed in the summer could range from a net benefit to the economy of £1bn to a net cost of £20bn.

The Plan confirms the government push for a huge move to renewable heat technologies with up to half of the heat buildings use coming from technologies such as heat pumps by 2030. Electric cars will also be pivotal to emission reduction efforts. Despite the failure to agree on the Longannet carbon capture and storage (CCS) plant, the government said it will also need to see up to 10GW of CCS technology installed, the equivalent to fitting CCS systems to generation capacity two and a half times the size of the UK's largest coal-fired power station. The plan also considers what the country needs to do to meet its 80% reduction target by 2050. The calculator shows that the current energy system costs £3,700 per person every year, but warns that the cost will rise to £4,682 if the UK does nothing to reduce its dependence on fossil fuels.

- (1) The Carbon Plan <http://www.decc.gov.uk/assets/decc/11/tackling-climate-change/carbon-plan/3702-the-carbon-plan-delivering-our-low-carbon-future.pdf>
- (2) Business Green 1st Dec 2011 <http://www.businessgreen.com/bg/news/2129266/carbon-plan-reveals-uk-significantly-exceed-emissions-targets>

## 6. Attacks on Wind Continue

The renewable energy industry has been fighting back after reports that a forthcoming report from KPMG will suggest the UK could save £34bn (or £550 per year per household) by ditching plans for a massive expansion in wind power capacity. The preliminary findings of the KPMG report claimed Britain could meet its 2020 carbon reduction targets more cost effectively by building nuclear and gas-fired power stations instead of wind farms.

Renewable UK said KPMG failed to consider the whole cost of new conventional power plants, citing research by energy regulator Ofgem showing electricity bills would increase by 52% if Britain failed to invest in renewable energy. "*The KPMG report focuses solely on the upfront costs of building new power plants, ignoring other lifecycle costs, such as fuel and decommissioning. In comparing the*

*costs of the various technologies, the report appears to deliberately fail to take into account the low operating costs of wind, which counterbalance the high capital and construction cost." (1)*

Renewable UK says the recent rises in electricity bills have been caused by the global increase in the price of gas, not by renewables. "*DECC's own Annual Report on Fuel Poverty clearly states that between 2004 and 2009, domestic electricity prices increased by more than 75 per cent, while gas prices increased by over 122 per cent over the same period.*" The cost of generating electricity from wind, according to Ofgem, is less than £10 per year per household, or less than one per cent of the average household fuel bill. So relying heavily on gas will not drive fuel bills down in the future.

Central to KPMG's claims is the assumption that a large proportion of the new generation of nuclear plants can be deployed quickly during the coming decade despite industry expectations of drawn out technical and planning approval processes. Few industry analysts believe that more than two new nuclear power stations will be operating before the end of the decade. However, a failure to deliver the level of nuclear power assumed in the KPMG report would leave us dangerously over-reliant on imported fossil fuels, during a decade in which a quarter of the UK's existing power stations will have to be permanently decommissioned. (2)

KPMG told the BBC's Panorama that a speedy move from coal to cleaner gas-fired energy generation would still allow the UK to meet EU emissions commitments and save consumers money at a time when home heating bills are at record highs. (3) Pete Atherton of Citigroup describes offshore wind as "eye-wateringly expensive". Costs are supposed to fall over the years, but in fact, he says, they keep going up. (The Government has set up a Task Force to reduce the cost of offshore wind (4))

When Panorama or *The Daily Mail* etc make dubious remarks about the cost of energy or green taxes a good place to look is the Carbon Brief blog. (5) Many of the sources cited by Panorama were unavailable. Given Ofgem's suggestion that gas is largely to blame for the current high state of fuel bills, the blog looks in particular at claims made by energy academic Dieter Helm that gas prices may fall in the future, making renewables relatively more expensive. The unstated assumption - which Helm has frequently promoted - is that indigenous production of shale gas will be the cause of that. Fair enough - it's a point of view. Both a UK Parliamentary Committee which looked into the question and Deutsche Bank have concluded that shale gas is unlikely to have a dramatic impact on gas prices in this country, but we did not hear from them in the programme.

Damian Carrington in *The Guardian* asked: "*So how much are customers paying for this supposed lunacy?*" The answer, nowhere to be found in the whole 30-minute programme is about £20 a year - for all renewables subsidies. Include all government levies - mainly for schemes increasing energy efficiency and alleviating fuel poverty - and the cost rises to £80 a year. The increase in the average gas bill alone since last year due to wholesale price rises, using Ofgem numbers, was about £170. (6)

Tom Heap of Panorama responded to Carrington's piece and Carrington responded again in the Comments section. (7) The good thing about this debate is that, as many of those who appeared on Panorama said, energy prices are going up whatever mix of technology is deployed, so unless politicians set out the case for their actions in an honest and open way, public anger is likely to foil the urgent need to give the UK an energy system for the 21st century.

A stream of front-page newspaper reports, some now retracted after Press Complaints Commission complaints, have exaggerated current green and social levies on energy bills, claiming they were adding £200 or even £300 a year. Other stories have claimed future levies could add £1,000 a year: government figures predict a £135 increase by 2020 but with bills overall just £13 higher than if no policies to reduce carbon emissions had been implemented, owing to rising fossil fuel costs. (8)

Responding to these reports Secretary of State for Energy and Climate Change, Chris Huhne, said that shale gas is unlikely to become a game changing technology anytime soon, and criticised those



touting it as a more "realistic" technology than wind turbines. "A golden age of cheap energy looks increasingly unlikely, and wind turbines are certainly here to stay," he said. "Shale gas has not yet lit a single room in the UK, nor roasted a single Sunday lunch. Yet those who clamour loudest for 'realistic' energy policies would have us hitch our wagon to shale alone." (9)

The KPMG report, which was supposed to be published on 8<sup>th</sup> November, now seems to have mysteriously disappeared. (10)

- (1) Business Green 7<sup>th</sup> Nov 2011 [http://www.businessgreen.com/bg/news/2123108/wind-power-sector-slams-flawed-kpmg-energy-report?WT.rss\\_f=News&WT.rss\\_a=Wind+power+sector+slams+%27flawed%27+KPMG+energy+report](http://www.businessgreen.com/bg/news/2123108/wind-power-sector-slams-flawed-kpmg-energy-report?WT.rss_f=News&WT.rss_a=Wind+power+sector+slams+%27flawed%27+KPMG+energy+report)
- (2) Renewable UK Press Release 7<sup>th</sup> Nov 2011 <http://www.bwea.com/media/news/articles/pr20111106.html>
- (3) BBC 7<sup>th</sup> November 2011 [http://news.bbc.co.uk/panorama/hi/front\\_page/newsid\\_9631000/9631864.stm](http://news.bbc.co.uk/panorama/hi/front_page/newsid_9631000/9631864.stm)
- (4) DECC 12<sup>th</sup> Oct 2011 [http://www.decc.gov.uk/en/content/cms/news/pn11\\_81/pn11\\_81.aspx](http://www.decc.gov.uk/en/content/cms/news/pn11_81/pn11_81.aspx)
- (5) Carbon Brief 8th Nov 2011 <http://www.carbonbrief.org/blog/2011/11/looking-into-panoramas-sources>
- (6) Guardian 8th Nov 2011 <http://www.guardian.co.uk/environment/damian-carrington-blog/2011/nov/08/energy-bills-panorama-renewables>
- (7) Guardian 9<sup>th</sup> Nov 2011 <http://www.guardian.co.uk/environment/blog/2011/nov/09/energy-bills-panorama?intcmp=122#start-of-comments>
- (8) Guardian 7<sup>th</sup> Nov 2011 [http://www.guardian.co.uk/environment/2011/nov/07/transparency-green-taxes-energy-bills?CMP=tw\\_t\\_gu](http://www.guardian.co.uk/environment/2011/nov/07/transparency-green-taxes-energy-bills?CMP=tw_t_gu)
- (9) Telegraph 8<sup>th</sup> Nov 2011 <http://www.telegraph.co.uk/earth/energy/8877214/Britain-cant-afford-to-bet-its-future-on-shale-gas-wind-turbines-are-here-to-stay.html>
- (10) Business Green 9th Nov 2011 [http://www.businessgreen.com/bg/news/2123863/huhne-wind-turbines-stay?WT.rss\\_f=Home&WT.rss\\_a=Huhne%3A+%27Wind+turbines+are+certainly+here+to+stay%27](http://www.businessgreen.com/bg/news/2123863/huhne-wind-turbines-stay?WT.rss_f=Home&WT.rss_a=Huhne%3A+%27Wind+turbines+are+certainly+here+to+stay%27)

## 7. Shale Gas will wreck chances of meeting climate targets

The UK will fail to meet its climate targets if industry and politicians back widespread drilling for shale gas, according to a new report from the Tyndall Centre for Climate Research. About 2tr cubic feet of natural gas trapped in dense shale rocks is estimated to lie beneath Lancashire according to Cuadrilla Resources, the main shale gas company operating in the UK. Further exploration in Wales, Scotland and other parts of England could add substantially to this total. The report, commissioned by the Cooperative Group, warned that exploiting even a minor proportion of this gas would generate so much carbon dioxide that greenhouse gas emissions targets would be rendered unreachable.

Paul Monaghan, head of social goals at the Cooperative, said: "... evidence is now emerging which indicates that gas derived from shale may have a significantly greater carbon footprint than previously thought, seriously questioning whether it can play any role in the transition to a low-carbon economy. The calls from 'big gas' for the abandonment of renewables targets must be rebuffed, and here is the science to do just that."

The amount of investment needed to exploit gas reserves – about £32bn – would be enough to build 2,300 offshore wind turbines, which would produce enough renewable energy to meet government targets. Shale gas exploration also supports fewer jobs than renewable energy generation – hundreds of thousands of jobs could be created in offshore wind, solar power and other green energy, but drilling shale gas wells requires minimal manpower. (1)

- (1) Guardian 23rd Nov 2011 <http://www.guardian.co.uk/environment/2011/nov/23/shale-gas-climate-change-targets>
- (2) Shale Gas: An Updated Assessment of Environment and Climate Change Impacts, Tyndall Centre, November 2011 [http://www.tyndall.ac.uk/sites/default/files/broderick\\_et\\_al\\_2011\\_shale\\_gas\\_update\\_high\\_quality.pdf](http://www.tyndall.ac.uk/sites/default/files/broderick_et_al_2011_shale_gas_update_high_quality.pdf)

## 8. Windfall for Carbon Fat Cats

The Chancellor George Osborne confirmed a £250m package of support, in his Autumn Statement, for energy intensive industries. The measures include compensation for key businesses to help offset the indirect cost of the carbon price floor and the EU emissions trading system, and also increase the level of relief from the climate change levy on electricity to 90%. (1)

In a clear attempt to redirect the coalition's green policies, the chancellor told parliament: "*I am worried about the combined impact of the green policies adopted not just in Britain, but also by the European Union ... if we burden [British businesses] with endless social and environmental goals – however worthy in their own right – then not only will we not achieve those goals, but the businesses will fail, jobs will be lost, and our country will be poorer.*" The campaign group, Sandbag, said many of the companies that benefitted from the chancellor's easing of carbon regulations were the same ones that had pocketed free carbon permits worth hundreds of millions of pounds in the last few years under the EU's emissions trading scheme. (2)

The government's green ambition is dead, said Damian Carrington, choked by the exhaust fumes and chimneystack smog belched out by the chancellor's desperate and wrong-headed attempt to restart the economy's engine. He threw yet more taxpayers' cash at the carbon fat cats in the highly polluting steel, cement and other energy intensive industries, a sector that has perfected the dark art of special pleading. (3)

- (1) Telegraph 29th Nov 2011 <http://www.telegraph.co.uk/finance/budget/8924201/Autumn-Statement-2011-heavy-industry-gets-250m-energy-relief.html>
- (2) Guardian 29th Nov 2011 <http://www.guardian.co.uk/uk/2011/nov/29/autumn-statement-george-osborne-green-policies>
- (3) Guardian 29th Nov 2011 <http://www.guardian.co.uk/environment/damian-carrington-blog/2011/nov/29/green-autumn-statement-osborne-economy-environment>

## 9. Low Level Waste Battles

Campaigners from King's Cliffe in Northamptonshire lost their high court bid to stop plans for a low level nuclear waste dump near their village. The proposal was given the go ahead by the Government back in May, but campaigners say not enough consideration has been given to the long term environmental impact. Campaigners had raised £30,000 to mount the legal challenge. (1) The Government granted Auegan planning permission for the disposal of low-level radioactive waste at Kings Cliffe until the end of August 2013. Louise Bowen-West, a member of the King's Cliffe Wastewatchers and her fellow campaigners are concerned that this gives site operator Auegan a foot in the door for its proposals to expand the site's operation for hazardous and nuclear wastes until 2026, using the other half of the site. Her counsel, David Forsdick, argued that this was a "*classic case of the developer obtaining through this permission a foot in the door for the extended landfill*" and said that the decision was unlawful and should be quashed. On 2<sup>nd</sup> December six campaigners were arrested on suspicion of aggravated trespass at Kings Cliffe. (3)

Meanwhile, nuclear waste and asbestos from Scotland are being dumped at Lillyhall in Cumbria. The radioactive material, classified as "very low-level waste", includes contaminated items from the former nuclear plant at Chapelcross. County councillors are furious, especially as the Scottish Government is against nuclear power and Scottish and Southern Energy has pulled out of the consortium to build a nuclear power station at Sellafield. The council has contacted the site director at Chapelcross and the head of the Scottish Government's radioactive waste team to voice its concerns. It says that it is "entirely inappropriate" to dump radioactive waste at Lillyhall. (4)

- (1) Peterborough Evening Telegraph 3<sup>rd</sup> Nov 2011 [http://www.peterboroughtoday.co.uk/news/et-business/business-news/kings\\_cliffe\\_campaigners\\_lose\\_nuclear\\_waste\\_legal\\_battle\\_1\\_3212591](http://www.peterboroughtoday.co.uk/news/et-business/business-news/kings_cliffe_campaigners_lose_nuclear_waste_legal_battle_1_3212591)
- (2) Planning 4<sup>th</sup> Nov 2011 <http://www.planningresource.co.uk/news/1102572/Judge-backs-Pickles-nuclear-waste-decision/>
- (3) BBC 2<sup>nd</sup> December 2011 <http://www.bbc.co.uk/news/uk-england-northamptonshire-16003493>
- (4) Whitehaven News 27<sup>th</sup> October 2011 <http://www.whitehavennews.co.uk/news/scottish-send-nuke-waste-to-our-landfill-1.891497?referrerPath=news>

## 10. Green Deal – less than 20% of fuel poverty suffers can expect help by 2016

Long-awaited details of the so-called Green Deal have been outlined by Chris Huhne, who promised the scheme will drive £14bn of investment in energy efficiency measures. He predicting the measures would not only protect property owners from rising energy bills but also support at least 65,000 insulation and construction jobs by 2015. (1) Details were released as part of a Government consultation. (2)

There will also be £1.3 billion a year of additional help from energy companies for vulnerable and hard-to-insulate homes. Overall average household energy bill in 2020 will be 7% or £94 lower than without energy and climate polices. (3) The Government also announced £200m of additional funding to provide a special time-limited introductory offer to boost early take-up of the Green Deal scheme. (4)

The scheme allows businesses, landlords, and homeowners to install packages of energy saving technologies such as insulation at no upfront cost, repaying the loan through a surcharge on energy bills over 25 years. Crucially the repayments have to be lower than the savings realised as a result of the energy efficiency measures, meaning participants in the scheme should end up better off. Critics have warned that incentives will have to be put in place to encourage households and businesses to take on the hassle of improvements to their properties.

The microgeneration industry expressed "disappointment" in the consultation because it failed to provide sufficient detail on how the scheme could be used to accelerate the roll out of small scale renewable energy technologies. (5)

The new Energy Company Obligation (ECO) is designed to subsidise energy efficiency measures for low-income and vulnerable households from 2013. With 4.1m English households officially in fuel poverty in 2009, and with a government duty to eradicate this scourge by 2016 the scheme will have a lot of work to do. But even on the most ambitious estimates, the ECO will bring relief to only 840,000 fuel-poor households by the end of 2015. This will mean at least 3m households left to choose between heating and eating. In addition to urgently helping them with their energy bills, the answer to fuel poverty is to increase dramatically the energy efficiency of the housing stock, so that homes are effectively "fuel poverty proofed". More money will have to be found. (6)

Briefing by JDS Associates on the Green Deal and ECO 25th Nov 2011.

<http://jdsassociates.com/download/home/FinalGreenDealConsultationJDSBriefing251111/pdf>

Changeworks and the Scottish Government presentations at five community events on the UK Government's Green Deal scheme. <http://www.changeworks.org.uk/community-groups/green-deal/618/>

- (1) Business Green 23rd Nov 2011 <http://www.businessgreen.com/bg/news/2127288/government-unveils-gbp14bn-green-deal-scheme>
- (2) DECC 23<sup>rd</sup> Nov 2011 [http://www.decc.gov.uk/en/content/cms/consultations/green\\_deal/green\\_deal.aspx](http://www.decc.gov.uk/en/content/cms/consultations/green_deal/green_deal.aspx)
- (3) DECC 23rd Nov 2011 [http://www.decc.gov.uk/en/content/cms/news/pn11\\_096/pn11\\_096.aspx](http://www.decc.gov.uk/en/content/cms/news/pn11_096/pn11_096.aspx)
- (4) DECC 24<sup>th</sup> Nov 2011 [http://www.decc.gov.uk/en/content/cms/news/pn11\\_099/pn11\\_099.aspx](http://www.decc.gov.uk/en/content/cms/news/pn11_099/pn11_099.aspx)

- (5) Business Green 24<sup>th</sup> Nov 2011 <http://www.businessgreen.com/bg/news/2127577/microgeneration-industry-furious-green-deal-snub>
- (6) Guardian 2nd Dec 2011 <http://www.guardian.co.uk/society/2011/dec/02/government-cold-on-fuel-poverty>

## 11. Micro-CHP

Micro-CHP could actively contribute to the UK's transition to greener heat and power generation, with the right support. Micro-CHP, a technology developed and manufactured in the UK, can use the nation's gas network and installer skills to enable consumers to heat their homes efficiently and at the same time generate low-carbon electricity that can be used on-site or exported to the grid. A new report sets out a road-map demonstrating how micro-CHP could replace condensing boilers in the home heating market, radically reducing household emissions. However, micro-CHP is an emerging technology and wide and rapid deployment will be crucial to achieving the necessary economies of scale. The industry is convinced that the installation of over 1 million micro-CHP units in the UK by 2020 is an achievable and credible aspiration, but that the right Government support will be key to making this happen. 1 million units would generate around 20GWh of electricity on a winter's day.

JDS Associates 9th Nov 2011

<http://www.jdsassociates.com/download/home/MicroCHP/pdf>

## 12. Nuclear Shorts

The UK's "eccentric" determination to build new nuclear power means it is not fit to take part in the "third industrial revolution" of switching to clean renewable energy, according to one of the world's most influential climate scientists. Prof John Schellnhuber, the current adviser to the German chancellor, Angela Merkel, and previous adviser the president of the European commission and other governments, said the UK was missing out owing to its failure to replicate the successful use of feed-in-tariffs (Fits) to kickstart its renewables industry. (1)

Lawyers working with the campaigning group Energy Fair say that some existing and proposed new subsidies for nuclear power in the UK may be unlawful under EU laws designed to promote fair competition. A formal complaint is now being prepared for the European Commission. (2)

A new Austrian study looking at the carbon emissions from the whole nuclear lifecycle concludes that while nuclear power using uranium with high ore grades produces lower greenhouse gas emissions than coal and oil, the resources of rich uranium ores and uranium in general are – as fossil fuels – limited. Because in future a decreasing ore grade in the available resources has to be assumed, the CO<sub>2</sub> emissions of nuclear power can reach up to 210 CO<sub>2</sub>/kWh. (3)

As we go to press the government published its statutory rules for new nuclear operators to produce plans for funding the decommissioning of their power stations and managing their radioactive waste. DECC said this would enable new nuclear operators to come forward with plans to deal with decommissioning and radioactive waste management for approval by the secretary of state. Alongside this, the Government confirmed how it will calculate the price operators will pay for the disposal of nuclear waste in a geological disposal facility. (4)

- (1) Guardian 15th Nov 2011 <http://www.guardian.co.uk/environment/2011/nov/15/nuclear-renewables-schellnhuber>
- (2) Response Source 16th Nov 2011  
[http://www.responsesource.com/releases/rel\\_display.php?relid=gELmz](http://www.responsesource.com/releases/rel_display.php?relid=gELmz)
- (3) Austrian Institute of Ecology et al. Energy Balance of Nuclear Power Generation, 2011  
[http://www.energyagency.at/fileadmin/aea/pdf/publikationen/broschueren/Endbericht\\_LCA\\_Nuklearindustrie-engl.pdf](http://www.energyagency.at/fileadmin/aea/pdf/publikationen/broschueren/Endbericht_LCA_Nuklearindustrie-engl.pdf)
- (4) DECC 8th Dec 2011 [http://www.decc.gov.uk/en/content/cms/news/pn11\\_108/pn11\\_108.aspx](http://www.decc.gov.uk/en/content/cms/news/pn11_108/pn11_108.aspx)