



NuClear News No.14 January 2010

- 1. Consultation, consultation, consultation**
- 2. North-West Select Committee**
- 3. Copenhagen Post Mortem**
- 4. Green New Deal**
- 5. Home Generation**
- 6. Offshore Wind Jobs Con?**
- 7. How to get all energy from renewables by 2030**
- 8. Four Nuclear Myths**
- 9. Uranium – environmental racism**
- 10. Carbon Prices**
- 11. And Finally ...**

1. Consultation, consultation, consultation

As we reported in NuClear News No.13 the Government has launched consultations on its Draft National Policy Statements on Energy Infrastructure – including one on nuclear power – and on the Proposed Regulatory Justification decisions on new nuclear power stations. (2) Both consultations close on 22nd February 2010.

The draft National Policy Statements are also subject to Parliamentary scrutiny. The Energy and Climate Change Committee has already called for written evidence to help it determine whether the energy NPSs are fit for purpose. The Committee will be receiving copies of written submissions made to the DECC's consultation but also welcomes additional comments. Although the consultation period is open until February 22nd, the Committee said it is only likely to be able to take account of submissions made before Friday January 15th. (3) Oral hearings have started already, with the Royal Town Planning Institute and Town and Country Planning Association giving evidence on 6th January. Greenpeace, Friends of the Earth and WWF will give evidence on 13th January. (4)

The Department of Energy and Climate Change has been arranging meetings around the country to consult. But there have been complaints about a whole variety of problems associated with these. The meeting at Hartlepool was organized with hardly any notice, for example, and the one near Hinkley was inaccessible by public transport. (5) However transcripts of the meetings already held are available on the consultation website. (6)

There is a huge amount of material to read in order to understand what is being proposed. Greenpeace has calculated that the average concerned individual living near one of the ten proposed nuclear sites would need to read more pages than War and Peace – and that is just to respond to the Nuclear NPS. Hugh Ellis, Chief Planner at the Town and Country Planning Association told MPs on the Select Committee that the government has failed to engage with the public on the NPSs. He said: "*It is creating an environment of suspicion*". (7)

But don't be put off. We urge you to respond having looked at as much, or as little, of the consultation documents as you can manage. And help is at hand. The Nuclear Free Local Authorities have published two briefings – one on the NPS consultation (8) and one on the Justification consultation. (9) First read what the former chairman of the Sustainable Development Commission has to say about nuclear power (10) – and then, as the Australians might say, get down that tunnel and turn the light on.

(1) See <https://www.energynpsconsultation.decc.gov.uk/>

- (2) See http://www.decc.gov.uk/en/content/cms/consultations/reg_just_cons/reg_just_cons.aspx
- (3) New Energy Focus 13th Nov 2009
http://www.newenergyfocus.com/do/ecco/view_item?listid=1&listcatid=32&listitemid=3214§ion=Policy
- (4) See http://www.parliament.uk/documents/upload/NPS_timetable.pdf
- (5) See a report from Heysham here: <http://web.mac.com/mariannebirkby1/iWeb/Radiation%20Free%20Lakeland/Heysham%20-Smoke%20and%20Mirrors%20%7EDept%20of%20Energy%20and%20Climate%20Change.html>
- (6) See <https://www.energynpsconsultation.decc.gov.uk/home/events/localevents/>
- (7) New Energy Focus 7th January 2010.
http://www.newenergyfocus.com/do/ecco/view_item?listid=1&listcatid=32&listitemid=3402§ion=Policy
- (8) See <http://www.nuclearpolicy.info/docs/nuclearmonitor/NewNuclearMonitorNo17.pdf>
- (9) See <http://www.nuclearpolicy.info/docs/nuclearmonitor/NewNuclearMonitorNo18.pdf>
- (10) <http://blogs.24dash.com/jonathonporritt/2009/12/08/time-to-renew-fight-against-nuclear-distractions/>

2. North-West Select Committee

The North West Regional Select Committee of the House of Commons has been seeking written evidence for its second inquiry on the Future of the Nuclear Industry in the North West. The closing date for submissions was 5th January 2010. (1)

The submission from the Nuclear Free Local Authorities focussed on the economic impact of four large energy infrastructure projects, possibly all taking place around the same time in the North West. (2) As a capital intensive industry, nuclear power is not a very efficient way of creating jobs. It produces around 75 jobs per year per TWh of power, whereas wind power produces 918 – 2,400 per year per TWh. And due to technological changes, any new nuclear power stations would employ fewer people than existing plants. (3) Investment in renewables and energy efficiency would create seven times more green jobs over the next ten years than would be lost in the coal and nuclear sectors in Europe, according to a report published by Greenpeace and the European Renewable Energy Council (EREC), and backed by a number of trade unions. (4) Peter Bradford, a former member of the Nuclear Regulatory Commission, argues that nuclear power could actually kill jobs. The capital markets are not swimming in credit, and may well suck up money that might be otherwise be available for, say, wind projects that could create far more jobs per pound spent. (5)

The other point North-west MPs should be concerned about is the contentious issue of nuclear waste. The Government said in the Nuclear NPS that it is satisfied effective arrangements will exist to manage and dispose of the waste produced by new reactors. “As a result the IPC need not consider this question.” Consequently the need to store spent nuclear fuel at reactor sites for up to 160 years is not even going to be examined by the new Infrastructure Planning Commission.

The Government says it is confident that it will find a suitable site in a community which has expressed a willingness to host a site which almost certainly means it is assuming a geological waste disposal facility will be built in Cumbria, whether or not to Cumbria agrees to host it. The Government has explicitly stated it is prepared to “explore other approaches” i.e. override a Community’s wishes – if the voluntarism approach to disposal does not work. (6)

The Justification consultation quotes the ICRP Publication 77 which states “*Waste management and disposal operations are an integral part of the practice generating the waste. It is wrong to regard them as a free standing practice that needs its own justification.*” (7)

Under the Planning Act 2008 the Nuclear NPS consultation is the last chance to challenge the principle that new nuclear reactors should be built at the four proposed sites in the North-west, and that these reactors should be permitted to generate nuclear waste. It looks likely that, as things stand at the moment, the IPC will be simply told that the strategic question of whether nuclear waste should be disposed of in a geological repository has already been decided and that any planning application for a geological disposal facility only needs to be examined with regard to local planning issues. There will effectively be no Nirex Inquiry Part 2. In other words, Cumbria could be forced to accept a geological disposal facility against its will without even so much as a public inquiry.

- (1) See http://www.parliament.uk/parliamentary_committees/nw/nw_pn_091127_nuclear_industry.cfm
- (2) NFLA submission to North West Select Committee Inquiry on the future of the nuclear industry in the North-west, January 2010. <http://www.nuclearpolicy.info/docs/consultations/NWSelectCommitteeresponse.pdf>
- (3) Goldemberg, J., 2004, The Case for Renewable Energies, International Conference for Renewable Energies, Bonn, quoted in NEF, 2005, Mirage and Oasis, p41. http://www.neweconomics.org/gen/z_sys_PublicationDetail.aspx?PID=209

(4) Media Newswire 22nd September 2009

http://media-newswire.com/release_1099153.html

Energy Sector Jobs to 2030: A Global Analysis, Greenpeace International 2009

<http://www.greenpeace.org/international/assets/binaries/energy-sector-jobs-to-2030.pdf>

(5) How did \$50bn high risk, job killing, nuclear loans get in the stimulus? Fraudulent budget gimmickry, Climate Progress. February 11, 2009. <http://climateprogress.org/2009/02/11/nuclear-loan-guarantee-program-stimulus/>

(6) DECC “The arrangements for the management and disposal of waste from new nuclear power stations: a summary of evidence” November 2009 (para 106 –page 23)

<https://www.energyngpsconsultation.decc.gov.uk/nuclear/managementdisposalwaste/summaryevidencepaper/>

(7) The Justification of Practices Involving Ionising Radiation Regulations 2004: Consultation on the Secretary of State’s Proposed Decision as Justifying Authority on the Regulatory Justification of the New Nuclear Power Station Designs currently known as the AP1000 and the EPR. Volume 2 and Volume 3 para 4.1.

3. Copenhagen Post Mortem

Even the best proposals put forward at the Copenhagen summit only went half way towards the emissions reductions needed by 2020 to keep the global average temperature rise below 2°C. An assessment by the “Climate Action Tracker” of commitments and pledges put forward by industrialized and developing countries shows the world is heading for a global warming of 3.5°C by 2100. Greenhouse gas concentrations are projected to be around 800 ppm CO₂ equivalent at the end of the century giving a one in four chance warming will exceed 4°C. (1)

The Copenhagen Accord did agree at the end of climate summit to an aspiration to keep the temperature rise below 2°C, but it remains unclear how this will be achieved. Currently, no quantified emission reductions have been provided for any country, or group of countries, although countries are to make proposals by 1 February 2010.

The failure of the Copenhagen Conference to come up with a legally binding set of targets will dominate environmental politics for the whole of 2010 and beyond. Many of those working on climate issues in the environmental NGOs are still carrying out post-mortems, but one theme is beginning to emerge – the key to progress now will be bottom-up action.

Solar Century’s Jeremy Leggett says: *“many commentators are saying ... meaningful bottom-up progress is not just possible, but holds the potential for magical surprises in the crucial few years ahead. Let’s hope that’s not wishful thinking.”*

Our addiction to top-down, command-and-control governance is as dangerous as our addiction to carbon, according to Climate4Change. (2) While we should never abandon the quest for a legally binding international agreement, we must redouble our attempts to open up a new front at the local level. One of the few positive notes from Copenhagen was the conference of the elected mayors from the major cities. Over the last decade, in spite of the national politics, American cities such as Boulder, Portland and Santa Monica have been quietly, but effectively, decarbonising their economies. The emergence of the Transition Towns movement in the UK along with the trailblazing work of a few local councils such as Kirklees, Stoke, Birmingham and Camden have started to show how fine words can be turned into effective actions.

Climate4Change says *“A groundswell of actions by individual communities led by local authorities, supported in turn by national government, is surely the most effective way of creating the climate for change that would tip our leaders into action”*.

In an upbeat assessment Johann Hari in *The Independent* says there is only one way to change the dynamic: *“...a mass movement of ordinary democratic citizens. They have made the impossible happen before. The time for changing your light-bulbs and hoping for the best is over. It is time to take collective action. It works. Look at Britain. Three years ago, eight new coal power stations were being planned, and the third runway at Heathrow was all but inevitable. A few thousand heroic young people took direct action against them. Now all the new coal power stations have been cancelled, and the third runway is dead in the water...That was done by a few thousand people. Imagine what tens or hundreds of thousands could do”*.

“Copenhagen had one value, and one value alone”, says Hari, *“it has shown us that if we don’t act in our own self-defence now, nobody else will.”* (3)

Polly Toynbee in *The Guardian* says *“Despair is not acceptable”*. We have to pray that Lord Stern is right and the

market can fix it, as green technology becomes more profitable than fossil fuels. “*As things stand, politics has not enough heft nor authority*”. (4)

Replacing nuclear power can only save around 4% of the UK’s carbon emissions. That is why promoting new reactors is so dangerous - we need to be absolutely sure they are not going to negatively impact on our ability to deal with the other 96% of emissions. The UK Government’s Sustainable Development Commission (SDC), (5) Warwick Business School (WBS) (6) and the Environment Agency (7) have all warned that a decision to proceed with new reactors could seriously undermine the development of a low carbon energy system. It would give out the wrong signal to consumers and businesses, implying that a major technological fix is all that’s required, weakening the urgent action needed on energy efficiency. SDC says a decision to proceed with a new reactor programme will require “*a substantial slice of political leadership ... political attention would shift, and in all likelihood undermine efforts to pursue a strategy based on energy efficiency, renewables and more CHP.*” (8)

(1) Climate Action Tracker December 2009

<http://www.climateactiontracker.org/>

(2) Guardian Letters 22nd December 2009

<http://www.guardian.co.uk/environment/2009/dec/22/copenhagen-think-global-act-local>

(3) Independent 21st December 2009

<http://www.independent.co.uk/opinion/commentators/johann-hari/after-the-catastrophe-in-copenhagen-its-up-to-us-1846366.html>

(4) Guardian 19th December 2009

<http://www.guardian.co.uk/commentisfree/cif-green/2009/dec/18/gutless-planet-future-copenhagen-leaders>

(5) The role of nuclear power in a low carbon economy, UK Sustainable Development Commission, March 2006.

<http://www.sd-commission.org.uk/publications/downloads/SDC-NuclearPosition-2006.pdf>

(6) Mitchell, C and Woodman, B. New Nuclear Power: Implications For A Sustainable Energy System, Warwick Business School for Green Alliance, April 2005.

<http://www.green-alliance.org.uk/uploadedFiles/Publications/NewNuclearPower.pdf>

(7) Woolf, M. Don’t rush to nuclear power warns Blair’s environment adviser. Independent on Sunday, May 21, 2006. <http://news.independent.co.uk/uk/politics/article549529.ece>

(8) Is nuclear the answer? Sustainable Development Commission, March 2006

<http://www.sd-commission.org.uk/publications/downloads/IsNuclearTheAnswer.pdf>

4. Green New Deal

Lord Stern, who carried out the 2006 review of the economics of climate change, (1) says future generations will find it easier to pay off debt than cope with the consequences of climate change, so it would be better to borrow now to build a low carbon economy. (2) In 2006 he predicted that a 3°C increase in global average temperature would mean up to 170 million more people suffering severe coastal floods than with a 2°C rise, and 550 million more at risk of hunger, according to the 2006 Stern economic. (3)

But sea levels could rise three times faster than the official predictions used by Stern with a global average rise of up to 1.9 metres (6ft 3in) by 2100, according to a new assessment published in the Proceedings of the National Academy of Sciences. (4) Even a 1.4 metre rise would devastate coastal cities such as Calcutta and Dhaka and force London, New York and Shanghai to spend billions on flood defences. (5)

Another economist, Adair Turner, the outspoken head of the City regulator, believes that, whichever party wins the next election, the government should embark on a tax and spend programme to green the economy and create jobs. He says the Government may have to take a more direct role because the market cannot be relied upon to deliver what is needed. Turner’s ideas chime with those of the New Economics Foundation, which has been calling for a “Green New Deal”, to push huge investments into renewables and energy-saving technologies, to create thousands of jobs and reduce carbon emissions. (6)

(1) Stern Review on the Economics of Climate Change. HM Treasury October 2006

http://www.hm-treasury.gov.uk/sternreview_index.htm

(2) Times 2nd December 2009

<http://www.timesonline.co.uk/tol/news/environment/article6939942.ece>

(3) Scotsman 18th December 2009

<http://thescotsman.scotsman.com/news/One-day--to-.5922623.jp>

(4) Independent 8th December 2009

<http://www.independent.co.uk/environment/climate-change/sea-levels-may-rise-three-times-more-than-first-thought-1836036.html>

(5) Times 1st December 2009

<http://www.timesonline.co.uk/tol/news/environment/article6938356.ece>

(6) Guardian 1st January 2010

<http://www.guardian.co.uk/business/2010/jan/01/fsa-adair-turner-green-economy>

5. Home Generation

The Chief Executive of National Grid, Steve Holliday, says that 15% of the country's electricity production could come from so called "embedded generation" in homes and offices by 2020 as micro generation becomes increasingly viable after the £9 billion rollout of "smart meters" for every home in Britain. (1) This is higher than the 12% figure previously suggested by the European Photovoltaic Industry (2) because it covers micro-CHP as well as small-scale renewables. But it is also much higher than the 2% of electricity the Government is expecting to be supplied by small-scale renewables. (The CHP Association has been complaining that government indecision on feed-in tariffs is threatening the future of the UK's emerging micro-CHP industry) (3).

Jeremy Rifkin, a US academic and climate change guru who is advising Rome's mayor, and the governments of Spain and Greece and acts as an informal consultant for Germany's Angela Merkel calls this decentralised energy approach the "third industrial revolution". (4)

Alistair Darling's Pre-Budget Report at least sounded environmentally friendly, with an additional £200 million for energy efficiency promised from April. The Chancellor said he will help "up to 125,000 homes" replace inefficient boilers, and he guaranteed more cash for wind turbine and solar panel users. (5) Some in the boiler industry described this as a "drop in a bucket" and "half-hearted". It only applies to England and there is an estimated 4.5m G-rated boilers in the UK which should be replaced. (6)

Friends of the Earth accused Darling of wasting a golden opportunity to demonstrate genuine global leadership in developing a low-carbon future. He chose instead to be timid when he needed to be bold. (7) John Sauven, Greenpeace's executive director, said: "*A bold chancellor would have scrapped Trident, saved 100bn and used the cash to create a green investment bank. This would help British companies invest in clean technology, and bring thousands of jobs.*" (8)

David Cameron says a Conservative government would from "day one" kickstart £20bn of investment to make millions of homes more energy-efficient in a groundbreaking green partnership with Tesco and Marks & Spencer. Householders would share in the savings made on their power bills with the high street retailers who provide them with insulation. He says he has already signed up a group of local councils and the mayor of London, Boris Johnson, for the scheme which would tackle more than 30% of UK carbon emissions by offering 6 million households the chance to get £6,500 worth of energy-efficiency measures. Cameron sees the idea for a "localist green revolution" as an answer to his fear that what he describes as the current top-down climate change agenda is "in danger of starting to lose people". (9)

Ofgem has estimated that renewing infrastructure and meeting carbon targets is likely to require an investment of up to £200 billion which will mean increases in domestic energy bills of between 14% and 25% by 2020. (10) Clearly, without a large domestic energy efficiency programme it will be impossible to meet both climate change and fuel poverty commitments. More than seven million households struggle to pay their fuel bills, almost double the official estimate, according to new research published by the National Housing Federation. (11)

(1) Times 4th December 2009

http://business.timesonline.co.uk/tol/business/industry_sectors/technology/article6943586.ece

(2) See Microgeneration Fightback, NuClear News No.11

<http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo11.pdf>

(3) Letter from the CHPA, Guardian 2nd January 2010.

<http://www.guardian.co.uk/theguardian/2010/jan/02/10-10-combined-heat-and-power>

Times 7th January 2010

http://business.timesonline.co.uk/tol/business/industry_sectors/engineering/article6978511.ece

(4) Rifkin, J. Leading the way to the third industrial revolution, and a new social Europe in the 21st Century. The Foundation on Economic Trends, 2009. <http://www.foet.org/packet/European.pdf>

(5) Telegraph 10th December 2009. <http://blogs.telegraph.co.uk/news/willheaven/100019439/pre-budget-report-darlings-green-measures-are-camouflage/>

(6) Telegraph 6th Jan 2010

<http://www.telegraph.co.uk/finance/newsbysector/energy/6937572/Boiler-scrappage-scheme-who-will-benefit.html>

(7) Guardian 9th December 2009

<http://www.guardian.co.uk/uk/2009/dec/09/boiler-scrappage-grants-energy>

(8) Scotsman 10th December 2009 <http://thescotsman.scotsman.com/climatechange/PreBudget-report-Green-measures-400m.5899008.jp>

(9) Guardian 16th December 2009

<http://www.guardian.co.uk/politics/2009/dec/15/david-cameron-energy-efficiency-copenhagen>

(10) Renewable Energy Focus 3rd November 2009 <http://www.renewableenergyfocus.com/view/4946/uk-could-miss-target-for-renewable-energy/>

(11) Independent 29th December 2009

<http://www.independent.co.uk/news/uk/home-news/poll-reveals-more-than-7m-households-are-in-fuel-poverty-1851463.html>

6. Offshore Wind Jobs Con?

Gordon Brown and the Crown Estate announced on 8th January new Round 3 licenses for offshore wind which could potentially mean an offshore wind programme worth up to £75bn involving the construction of thousands of turbines.

(1) The Crown Estate announced which consortia have been successful in bidding to develop the nine zones, mostly in the North Sea, in the project, which is the most ambitious of its kind in the world. The prime minister used the announcement to promote the potential economic benefits of renewables. (2)

The projects will be bigger than anything which exists today in the UK or elsewhere. They will be further away from the coast and in deeper waters than existing offshore projects, making them more difficult and expensive to build and operate. The sites earmarked include the Moray Firth, Firth of Forth, Dogger Bank, Bristol Channel and Irish Sea and off Hornsea in East Yorkshire, Norfolk, Hastings, East Sussex and western Isle of Wight. The nine sites would have the potential to generate 25,000 megawatts of electricity. (3)

But the Crown Estate will not require developers to source a proportion of the turbines and other components from domestic manufacturers unlike other countries, including Spain and China. A spokeswoman for the Crown Estate said the government body, which owns the UK's seabed, was holding a supply chain roadshow for British manufacturers around the country, starting later this month. Working with regional development authorities, companies will be informed what components will be needed by the energy companies to help British industry benefit from the construction programme.

EEF, the Manufacturers' Organisation, has savaged suggestions from the chancellor, Alistair Darling, that Britain is benefiting from government support for a "green" jobs revolution, warning that the UK was instead in danger of "missing the boat". It points out that over 90% of the €2bn earmarked for the world's biggest wind farm in UK waters – the London Array, off Kent – is being spent abroad and ministers must take some of the blame. E.ON and the other investors in the London Array have just finalised a €2bn contract bonanza for suppliers, but the German power company confirmed that all but €180m of the work was being spent outside of Britain, largely because there were no suitable local suppliers.

Yet Darling wrote in the Guardian on 30 December that government action meant that 500,000 jobs would be created around the clean energy sector. The British Wind Energy Association (BWEA) said the lack of real local content highlighted the need for the UK to build up its indigenous industrial capacity as soon as possible. "*Huge efforts are being made by government to attract manufacturing to the UK and we wholeheartedly endorse that, but the London Array shows the sooner we manage to do this the better,*" a BWEA spokesman said. "*We are starting from a very low base, or pretty much non-existent one, when it comes to turbines.*" (4)

Behind the scenes, energy companies are nervous about the logistical and financial challenges of construction, that will start from 2014, according to *The Telegraph*. Dozens of smaller projects – including the London Array – have been delayed because of funding problems in recent years. Paul Willson, of PB Power says there is already a shortage in “laying barges” that erect the turbines at sea and can only work in the summer months, and there is a shortage of mechanical and civil engineers with the specialised skills to manufacture and install large number of turbines offshore. He also said there are not enough electrical engineers able to upgrade the grid so that the electricity can be transmitted from offshore to land. (5)

This contrasts sharply with the Government’s announcement of a substantial investment in civil nuclear manufacturing in Yorkshire and the North West to build a national civil nuclear manufacturing capacity. The Government will fund the Advanced Manufacturing Research Centre (AMRC) in Sheffield to the tune of £25m to co-ordinate work on new materials and components to boost the UK’s nuclear industry. The idea is that British suppliers can learn how to manufacture the components Areva and Westinghouse need for new reactors, and test them at the centre. Lord Mandelson also said that a further £8m would be provided to upgrade the nuclear laboratories at Manchester University’s Dalton Nuclear Institute. According to government figures, UK companies have the potential to provide up to 80 per cent of the work on construction of new nuclear power plants. (6)

Meanwhile nine European countries are formally drawing up plans to build a supergrid which would link renewable energy projects around the North Sea. (7)

(1) DECC Press Release 8th January 2010

<http://nds.coi.gov.uk/content/detail.aspx?ReleaseID=410196&NewsAreaID=2&HUserID=886,779,890,849,780,684,710,705,765,674,677,767,684,762,718,674,708,683,706,718,674&ClientID=-1>

(2) Guardian 4th January 2010

<http://www.guardian.co.uk/business/2010/jan/03/gordon-brown-wind-energy-programme>

(3) Sunday Express 3rd January 2010

<http://www.express.co.uk/posts/view/149357/-100bn-is-gone-with-wind>

(4) Guardian 4th January 2010

<http://www.guardian.co.uk/business/2010/jan/03/manufacturing-sector-slams-darling-claim-government-supports-green-jobs>

Times 8th January 2010

<http://www.timesonline.co.uk/tol/news/environment/article6980016.ece>

(5) Telegraph 8th January 2010

<http://www.telegraph.co.uk/earth/earthnews/6947267/Plans-for-100bn-wind-power-programme-called-into-question.html>

(6) Business Green 3rd December 2009

<http://www.businessgreen.com/business-green/news/2254390/forget-steel-sheffield-targets>

(7) Guardian 4th January 2010

<http://www.guardian.co.uk/environment/2010/jan/03/european-unites-renewable-energy-supergrid>

7. How to get all energy from renewables by 2030

Scotland could “easily meet” 100% of its electricity needs through renewables according to a report published by Scottish Natural Heritage (SNH). Scotland currently has an installed renewable capacity of around 2834MW. Another 3739MW has been given planning permission, but is not yet built, bringing the total to 6573MW, of which around 4000MW is onshore wind. The Scottish Government’s target is to produce 50% of Scotland’s electricity from renewables by 2020. This is around 8,000MW. There is a further 9,000MW of capacity awaiting planning consent, with an additional 8,500MW of offshore wind and between 500MW and 2,000MW of marine renewables under development and scheduled for completion by 2020. (1)

The world’s largest wave power device was switched on to the national grid in November. Scotland’s First Minister Alex Salmond said the Oyster machine marked a “key milestone” in renewable energy and announced almost £1 million to fund a second generation of the technology. The Oyster harnesses the power of waves off Orkney to drive an onshore electric turbine. The extra funds will help deliver Oyster 2, with three linked devices contributing up to 2MW of power by 2011. The Oyster was developed by Edinburgh-based Aquamarine Power’s marine energy researchers at Queen’s University, Belfast. (2)

Mr Salmond has never hidden his belief that renewable energy can transform Scotland’s economy, producing 10 times

the country's own energy needs. Scotland's potential renewables capacity is estimated to be around 60GW. Around 10% of Europe's wave-power potential and as much as a quarter of its tidal power potential is located in Scotland. The European Marine Energy Centre (EMEC) on Orkney provides world-leading test facilities for Aquamarine and other companies to develop the technology needed to harness this huge untapped potential. (3)

It has been clear for a while that Scotland is well placed to meet 100% of its electricity requirement from renewables in the not too distant future, (4) but what about the rest of the world? Now the Scientific American has published a plan to provide all of the world's energy (not just electricity) from renewables by 2030. (5) The plan, by Mark Z Jacobson and Mark A Delucchi, calls for millions of wind turbines, water machines and solar installations. It says the numbers are large but the scale is not insurmountable.

To ensure the energy system is clean, the study considers only technologies that have near-zero emissions of greenhouse gases and air pollutants over their entire life cycle. Nuclear power results in up to 25 times more carbon emissions than wind energy, when reactor construction and uranium refining and transport are considered. Carbon capture and sequestration technology can reduce carbon dioxide emissions from coal-fired power plants but will *increase* air pollutants and will extend all the other deleterious effects of coal mining, transport and processing, because more coal must be burned to power the capture and storage steps. Similarly, it considers only technologies that do not present significant waste disposal or terrorism risks.

The Energy Fair website has compiled a list of other reports which show the potential of renewables. (6)

(1) New Energy Focus 11th December 2009

http://www.newenergyfocus.com/do/ecco/view_item?listid=1&listcatid=32&listitemid=3338§ion=Wind

(2) Scotsman 21st November 2009

<http://news.scotsman.com/scotland/World39s-largest-wave-energy-device.5844251.jp>

(3) Herald 21st November 2009

<http://www.heraldscotland.com:80/news/transport-environment/first-minister-makes-waves-with-60ft-oyster-1.933307>

(4) Power of Scotland Renewed. Full Report. FoE Scotland, RSPB, WDM and WWF, July 2009

<http://foes.mccwel.com/sites/files/Power%20of%20Scotland%20full%20report.pdf>

Summary Report: <http://foes.mccwel.com/sites/files/Power%20of%20Scotland%20summary.pdf>

(5) A path to sustainable energy by 2030 by Mark Z Jacobson and Mark A Delucchi, Scientific American, November 2009.

<http://www.stanford.edu/group/efmh/jacobson/sad1109Jaco5p.indd.pdf>

(6) Energy Fair website

<http://www.nonukes.org.uk/potential-of-renewables>

See also <http://www.mng.org.uk/gh/scenarios.htm> and <http://www.mng.org.uk/gh/energy.htm>

8. Four Nuclear Myths

Amory Lovins of the Rocky Mountain Institute says public discussions on nuclear power are increasingly based on four notions unfounded in fact or logic: that

1. variable renewable sources of electricity can provide little or no reliable electricity because they are not "baseload";
2. those renewable sources require such enormous amounts of land, hundreds of times more than nuclear power does, that they're environmentally unacceptable;
3. *all* options, including nuclear power, are needed to combat climate change; and
4. nuclear power's economics matter little because governments must use it anyway to protect the climate.

In his latest paper (1) Lovins progressively demolishes these myths. He says nuclear power will reduce and retard climate protection, because new nuclear power is so costly and slow that it will save about 2–20 times less carbon per dollar, and about 20–40 times less carbon per year, than investing instead in the market winners—efficient use of electricity and micropower.

(1) Four Nuclear Myths by Amory Lovins

http://www.rmi.org/cms/Download.aspx?id=1550&file=2009-09_FourNuclearMyths.pdf

9. Uranium – environmental racism

As all the uranium used in commercial nuclear fuel is imported into the UK, it is important – on equity and sustainability grounds - to assess the environmental, radiological and other health impacts of procurement of the uranium that will be imported for future nuclear fuel. Inexplicably, the 200 page Appraisal of Sustainability: Radioactive and Hazardous Waste, (1) which is part of the Nuclear NPS consultation, makes no mention of the dangers and management challenges of uranium procurement and processing.

This is particularly curious, as another report (2) prepared as technical support to the Justification decision documents, this issue is addressed:

“Although the authors understand that the approach taken by the Government is that a Regulatory Justification decision takes account only of activities in the UK, this technical advice reviewed the radiological consequences of the entire fuel cycle for nuclear power generation using current reactor designs”.

The authors report an analysis performed for Sizewell and include a table which shows the radiological dose detriment from the nuclear fuel cycle. Almost 92% of the detriment is directly attributable to the mining and milling of uranium.

The UK has not examined fully within any major forum the issues arising from uranium mining. Calls have been made by Inspectors at both of the last two Public Inquiries into nuclear facilities (Sizewell B 1983-85 (3) and Hinkley Point C 1988-89 (4)) that this should be done.

The price being paid for reliance on uranium and its production is not only a financial one. Many additional costs such as people’s health and environmental degradation have been externalised and not taken into account. They need to be included in a full evaluation of the use of uranium as a fuel. Without a full evaluation of the impact of uranium mining, including an Appraisal of its Sustainability, the Nuclear NPS is not fit for purpose.

Dr David Lowry’s dossier of problems encountered in the major uranium mining countries: Australia, USA, Canada, Kazakhstan and Namibia, which he submitted to the first Justification consultation is now available on the Nuclear Waste Advisory Associates website. (5)

(1) Appraisal of Sustainability: Radioactive and Hazardous Waste, DECC, November 2009. <http://data.energynpsconsultation.decc.gov.uk/documents/aos/wastematrixes.pdf>

(2) Technical Advice to inform proposed Regulatory Justification decisions on new nuclear power stations, IDM68-2009.11, November 2009, Authors: Gregg Butler, Grace McGlynn (IDM), Andy Worrall, Kevin Hesketh (NNL) http://www.decc.gov.uk/Media/viewfile.ashx?FilePath=Consultations\proposedregulatoryjustificationdecisionsnewnuclearpowerstations\1_20091109121208_e_@_@_technicaladviceregulatoryadvice.pdf&filetype=4

(3) O’Riordan T, Kemp R, Purdue M (1988) *Sizewell B: an Anatomy of the Inquiry*, MacMillan ISBN 0333389441

(4) Barnes, Michael QC (1990), *The Hinkley Point Public Inquiries*, HMSO Conclusions and Recommendations Paragraph 31.145

(5) Lowry, D. (2009) Uranium Exploitation and Environmental Racism: why environmental despoliation and the ignorance of radiological risks of uranium mining cannot be justified by nuclear fuel production Response to the Justification Consultation (June 2008)

<http://www.nuclearwasteadvisory.co.uk/uploads/5845Uranium%20exploitation%20and%20environmental%20racism,%20submission%20to%20nuclear%20justification%20consultation,%2025-3-09.doc>

10. Carbon Prices

The Guardian reported in October that senior government officials had promised the nuclear industry to fix a higher carbon price in the event of a failure at Copenhagen. Now companies including Centrica are repeating calls for the UK government to intervene and set a floor price for carbon.

The price of carbon plummeted by almost 10% on Europe’s emissions trading market after the Copenhagen Summit. This was in response to the EU scrapping a planned commitment to cut emissions by 30% by 2020 because other countries failed to show similar ambition.

E.ON and Centrica warned that they would not invest the tens of billions of pounds to build expensive new nuclear reactors and clean coal plants at today’s carbon price. (1)

The Times says the weak deal has left the Government facing a choice of either acting unilaterally to underpin investment in new reactors or running the risk that companies will opt to channel funds into the cheaper, but polluting, gas-fired power stations. (2)

(1) Guardian 22nd December 2009 <http://www.guardian.co.uk/environment/2009/dec/21/falling-carbon-price-higher-energy-bills>
Independent 22nd December 2009 <http://www.independent.co.uk/news/business/news/low-carbon-price-threatens-investment-crucial-to-meet-uk-green-goals-1847397.html>

(2) Times 23rd December 2009 http://business.timesonline.co.uk/tol/business/industry_sectors/utilities/article6965723.ece

11. And Finally ...

The Times wins the prize this month for the two best headlines of the month – “Help harness the sun’s power to provide a brighter future for Africa’s Children” and “Helping hand for the solar salesman who put his cow on the market to bring power to the people”. Read and be inspired.

Times 17th December 2009 http://www.timesonline.co.uk/tol/news/specials/times_appeal/article6959359.ece

Times 24th December 2009

http://www.timesonline.co.uk/tol/news/specials/times_appeal/article6967000.ece