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1. Environment Agency View on Coal and Nuclear

Former Labour cabinet minister Chris Smith, now Lord Smith of Finsbury, was appointed as the new chairman of the Environment Agency in May 2008. (1) He has since set out some controversial ideas on coal, nuclear power and climate change which the Government would be wise to listen to.

Chris Smith was Shadow Environment Spokesperson from 1992 to 1994 and one of the principal authors of Labour's 1994 policy document *"In Trust for Tomorrow"* which was welcomed by environmental campaigners as *"genuinely radical stuff"*. It proposed creating 50,000 jobs through promoting energy efficiency, a moratorium on road building, stricter planning controls and greater use of renewable energy sources. The document committed Labour to not building any new nuclear power stations.

More recently, as chair of the Environment Agency, Lord Smith has talked about long-term storage and disposal of high-level nuclear waste as the *"great unsolved issue"* of nuclear fission. *"It is an absolute necessity if a new nuclear programme goes ahead that the issue of high-level waste is properly resolved."* (2)

Lord Smith also says that no new coal-fired power stations should be built unless they can capture and store carbon emissions: *"Building a new generation of coal fired power stations without capturing the carbon emissions would lock the UK into using high carbon technology for decades to come - this is not an environmentally sustainable way of generating power given the challenges we face with climate change"*. The Environment Agency believes 'carbon capture readiness', that is ensuring coal-fired power stations have the capability to install CCS technology at a later date should it be commercially viable, is insufficient for the climate change challenge that we face. (3)

In November 2008, Lord Smith called on the government to follow US president-elect Barack Obama and launch a multibillion pound *"green New Deal"* to boost clean energy and create jobs. He called for a comprehensive long-term strategy to cover investments in renewable energy, green technology, energy efficiency and developing new technologies such as carbon capture and storage. (4)

(1) Chris Smith appointed as new chair of the Environment Agency, DEFRA Press Release, May 8, 2008.
http://www.defra.gov.uk/news/2008/080508d.htm
(2) Making Local Connections on a Global Threat, Publicservice.co.uk, October 20, 2008
http://www.publicservice.co.uk/feature_story.asp?id=10661&topic=
(3) Environment Agency Press Release, September 25, 2008
http://www.environment-agency.gov.uk/news/86318.aspx?page=6&month=9&year=2008
(4) Hencke, D. Environment Watchdog urges Obama-style green New Deal, Guardian, November 25, 2008.
http://www.guardian.co.uk/environment/2008/nov/25/climate-change-renewable-energy-government

2. Nuclear Waste Policy Blunders Onwards.

For over three decades, the Government has been unable to decide how to deal with radioactive waste in the UK. (1) The history of Government schemes goes back as far as 1976 when eight sites were first selected for an underground nuclear waste dump. The Government's latest review of policy – known as the *"Managing Radioactive Waste Safely"* process – looked, for a brief period, as though it might make progress, having been based for the first time on intensive public consultation with no pre-ordained plan for a deep dump. But since the beginning of 2007 things have begun to unravel. In June 2007, the House of Lords Science and Technology Committee called proposals *"incoherent and opaque"*. (2) And in an unprecedented move, the Scottish Government refused to endorse the process. (3)

The Government's February 2003 Energy White Paper said there were important issues about nuclear waste which needed to be resolved, so it did not propose building new nuclear stations. (4) The Committee on Radioactive Waste Management (CoRWM), established in 2003 (and reconstituted with almost completely new membership in 2007), reported after three years' deliberation. (5) But a committee report does not represent a solution to this intractable problem.

The Nuclear Decommissioning Authority (NDA), which is now responsible for planning and delivering a geological disposal facility, says it hopes to identify two candidate sites by 2012, investigate the sites between 2014 and 2025 and announce the preferred site by 2025. So the first new nuclear power stations could be operating well before the opening of a nuclear waste dump.

Important recommendations made by CoRWM have been ignored by the Government. The recommendations only dealt with existing waste. CoRWM specifically said it did not want its recommendations seized upon as providing a green light for new build – yet that is exactly what the Government has been doing. CoRWM warned that new build waste would extend the time-scales for implementation, possibly for very long but essentially unforeseeable future periods. Creating new nuclear waste raises completely new political and ethical issues which are quite different from the issues raised by the waste we have already created. (6)

But CoRWM did recommend that existing nuclear waste should be 'disposed' of deep underground. It said that geological disposal of nuclear waste was the best option available within the present state of knowledge, and that there should be a new approach to implementation of a deep disposal policy, based on the willingness of local communities to participate. The Government seized on this recommendation, without accepting many of the prerequisites.

In June 2008 the Government published a White Paper on Managing Radioactive Waste Safely (7) which invited Councils in England and Wales to volunteer to host a nuclear waste dump in return for a range of *"community benefit packages"* such as investment in roads, schools and other public services – described by many as *"bribes"*. Copeland Borough Council (site of the Sellafield nuclear facility) and Allerdale Borough Council, both in West Cumbria have both indicated they might be prepared to host a nuclear waste dump. And Cumbria County Council has agreed to make an *"expression of interest"* for those parts of the County covered by the two boroughs.

The County Council held a full council meeting on 20th November to debate whether to support Copeland's expression of interest, but the final decision was taken by the County's Labour -controlled Cabinet meeting on 9th December, amid allegations democracy was being stifled. Stan Collins, a county councillor with the Liberal Democrats, said he was extremely concerned the cabinet had taken such an important decision, affecting so many people, without the involvement of other councillors. (8)

Chris McDonald, who was the lead inspector of a public inquiry in 1995-96 into a proposed nuclear waste facility near Sellafield, says evidence from the Inquiry showed the safety case was at best marginal - investigations should be moved elsewhere. (9) David Smythe, professor of geophysics at Glasgow University warned it would be "wrong" and possibly illegal in international law to use Sellafield which should have been ruled out Sellafield after previous research proved the area was unsuitable. There is clear evidence that West Cumbria possesses no suitable rocks. (10)

At a meeting held in Allerdale on 21st October, a UK Government official responsible for the Managing Radioactive Waste Safely strategy was asked what 'Plan B' was if West Cumbria was the only place to volunteer - but there was no suitable site. He replied that Plan B was to make Plan A work. Clearly the Government has to give the impression the disposal option has been sorted out in order to be able to continue pushing for new reactors.

(1) See the History of Nuclear Waste Disposal Proposals in Britain
http://www.no2nuclearpower.org.uk/reports/waste_disposal.php
(2) Radioactive Waste Management: An Update, House of Lords Science and Technology Committee,

June 2007. http://www.publications.parliament.uk/pa/ld200607/ldselect/ldsctech/109/109.pdf
(3) Scottish Government Press Release 25th June 2008
http://www.scotland.gov.uk/News/Releases/2007/06/25101822
(4) Our Energy Future – creating a low carbon economy, DTI, February 2003. Para 4.68
http://www.berr.gov.uk/files/file10719.pdf
(5) Managing Our Radioactive Waste Safely: CoRWM's recommendations to Government, July 2006.
http://www.corwm.org.uk/Pages/Current%20Publications/700%20-%20CoRWM%20July%202006%20Recommendations%20to%20Government.pdf
(6) CoRWM statement on new nuclear build, March 2006.
http://www.corwm.org.uk/Pages/Archived%20Publications/Tier%202%20(6)%20-%20Reporting/Tier%203%20-%20Other%20reporting/1593%20-%20CoRWM%20statement%20on%20new%20nuclear%20build.pdf
(7) Managing Radioactive Waste Safely: A Framework for Implementing Geological Disposal, DEFRA, June 2008. http://www.defra.gov.uk/environment/radioactivity/mrws/pdf/white-paper-final.pdf
(8) Macalister, T. Council leaders offer Lake District as nuclear dump, Guardian, December 10, 2008.
http://www.guardian.co.uk/environment/2008/dec/10/lake-district-nuclear-waste-dump
(9) Flaws in search for nuclear waste site, letter to The Guardian by Chris McDonald, June 28, 2008
http://www.guardian.co.uk/world/2007/jun/28/nuclear.uk
(10) Macalister, T, Sellafield 'not fit' for nuclear waste disposal, Guardian November 2, 2007.
http://www.guardian.co.uk/business/2007/nov/02/nuclearindustry.greenpolitics

3. Halting Climate Change without Nuclear

Amory Lovins, Chairman and Chief Scientist of the Rocky Mountain Institute, explores halting climate change, reducing oil dependence and using micropower instead of nuclear in a recent video filmed by Fora TV. (1) Described as an 'energy guru', Lovins says we are often given a dumb multiple choice question: would you prefer to die from climate change or oil wars or nuclear holocaust? But there is another choice which we are not usually given which is 'none of the above'. You do that by using energy in a way that saves money, and then the other problems go away at a profit, because it is cheaper to save fuel than it is to buy fuel. The money you save is enough to pay for the costlier carbon abatement measures you might need to take.

Energy intensity – energy used to make each dollar of GDP – has historically been reducing by around 1% per year. We need to increase that to 3 – 4% to save the climate. Lovins says doing 3-4% per year is not hard, and will make money.

The Rocky Mountain Institute's report - *"Winning the Oil End Game"* (2) – produced for the Pentagon, shows how to get the US completely weaned off oil by the 2040s. Lovins says it would cost around $15 to save each barrel of oil. In transport there is a common recipe. If you make cars ultra-light and ultra-slippery you can triple their efficiency. 87% of fuel put into a conventional car never gets to the wheels, it is lost in the engine and other inefficiencies. Of the eighth that gets to the wheels, half is lost heating the tires, road and air. Only the last 6% actually accelerates the car, only one twentieth of the mass you are accelerating is the driver, so only 0.3% of the fuel being burnt moves the driver. Every unit of energy you can save moving the car, can save seven more which would be wasted getting the energy to the wheels.

70% of US electricity goes to buildings. A house at the Rocky Mountain Institute was built without a boiler – and saved $1,100 by replacing the boiler with insulation. Advanced housing design can provide the same comfort with less energy use, but no greater capital cost. In retrofits typically 30 – 60% of energy can be saved with a payback of two or three years. In new buildings 40-90% can be saved with a lower capital cost.

On the supply-side of electricity – micropower (under which heading Lovins includes renewables apart from big hydro and combined heat and power) overtook nuclear power a few years ago and is now providing one sixth of the world's total electricity, and a third of new electricity. Although nuclear power can save carbon, it saves 2 to 11 times less per dollar and 20 – 40 times more slowly than if you spent the money on energy efficiency or micropower. If the US continues to insist that it needs nuclear power it gives an iron-clad excuse to countries that really want to use nuclear power to make bombs.

Lovins quotes Raymond Williams who says *"to be truly radical is to make hope possible not despair convincing"*. His talk certainly does that and is well worth a watch.

(1) Fora TV, December 12, 2008. http://fora.tv/2008/12/12/Amory_Lovins_Advocates_for_a_Cleaner_Safer_Energy_Future
(2) Winning the Oil End Game, Rocky Mountain Institute, 2007. http://www.oilendgame.com/

4. Carbon & Nuclear Free America

The US-based Institute for Energy and Environmental Research has produced a Statement of Principles to achieve a Carbon-free and Nuclear-free US Energy System. (1) The statement calls for a phase-out of fossil fuels and nuclear power by the year 2050. The demand is based on a programme set out in a recent book, Carbon-Free and Nuclear-Free: A Roadmap for U.S. Energy Policy (2) which provides a detailed analysis that shows the goal is technically and economically feasible. The Roadmap lays out how the US can get from a 94% reliance on fossil fuels and nuclear energy (as of 2005) to none by mid-century. Oil imports would be completely eliminated along the way.

The Statement says achieving a near total elimination of carbon emissions in the United States is implied by commitments under the United Nations Framework Convention on Climate Change (UNFCCC) combined with the latest report of the Intergovernmental Panel on Climate Change (IPCC). The IPCC estimates that global CO2 emissions should be reduced by 50 to 85 percent by 2050 relative to 2000 levels to limit temperature increases to less than 2 to 2.4 degrees Celsius, with the former reduction being given only a small chance of accomplishing the goal. If global emissions are allocated on a per capita basis, the U.S. would have to reduce carbon emissions by 92 to 96 percent by 2050 to have reasonable confidence that the temperature goal will be met. The US signed and ratified the UNFCCC, which went into effect in 1994.

The promoters of nuclear energy have used the threat of global warming to rekindle interest, but nuclear power entails risks of nuclear proliferation, severe accidents, and terrorist attacks. It would exacerbate the problem of nuclear waste, for which no reasonable solution is in sight. Overall, it shifts the burden of radiation and proliferation risks arising from current energy use to future generations.

New coal-fired power plants without carbon capture and storage (also called *"sequestration"*) should be banned. While there is some experience with CO2 storage, it is not yet a proven technology for climate protection, which requires isolation of CO2 from the atmosphere for hundreds, if not thousands, of years. Storage technology should preferably be developed and tested using emissions from existing rather than new sources of CO2.

The Statement concludes by saying that the establishment of a goal of achieving a carbon-free and nuclear-free U.S. energy sector by mid-century can have a transformative effect on the global political climate, which is a prerequisite for protecting the planetary physical climate. The ecological, health, and security benefits of realizing that goal will be immense.

(1) Statement of Principles to achieve a Carbon-free and Nuclear-free US Energy System. http://www.ieer.org/carbonfree/signon.php
(2) Makhijani, A. Carbon-Free and Nuclear-Free: A Roadmap for U.S. Energy Policy RDR Press and IEER Press, 2007. http://www.ieer.org/carbonfree/CarbonFreeNuclearFree.pdf. The Roadmap is described in Chapter 8.

5. Low Carbon Zone? – Go Large.

Europe's largest low carbon zone could be created in Wales' Heads of the Valleys (HoV) region. The HoV Low Carbon programme would see 40,000 microgeneration units or their equivalent installed in the area over the course of 15 years. At the same time 65,000 homes would have their energy efficiency measured with 39,000 energy reduction measures implemented. The project is expected to reduce energy bills in the area by £1.7 million, and help alleviate fuel poverty. (1)

The Welsh Assembly Government Finance Minister, Andrew Davies, announced that £12m would be made available from the Government. Additional funding is anticipated to be made available from: utility company spending through the recently announced Carbon Energy Reduction Target (CERT) obligation and community energy saving programme; the Low Carbon Building Programme (LCBP); social landlords, Heads of the Valleys and the private sector. (2)

The Heads of the Valleys programme has already been investing substantially in a number of pilot projects throughout the region. A range of renewable energy sources have been installed. Two projects have been undertaken with RCT Homes and Bron Afon Homes to introduce microgeneration technology during the refurbishment of existing homes.The projects enabled solar technologies to be installed in 295 flats while six care homes have benefited from solar heating and photovoltaic systems.

All the more frustrating for Scottish climate campaigners then when the Scottish Government revealed its energy efficiency action plan has been postponed until late in 2009. It had previously promised to publish it in 2008, but now the plan to boost home insulation, install smart meters and kick-start small-scale renewable and heat technologies has been delayed yet again. The plan was first announced in December 2004.

Urgent measures to improve energy efficiency are vital for combating climate change. The Scottish Government says its aim is to cut carbon emissions by 80% by 2050, but with the recent Scottish Climate Bill failing to include any annual targets until 2020, campaigners are beginning to wonder if the SNP-controlled Government is *"all talk and no action when it comes to cutting climate emissions"*. (3)

Meanwhile, the Scottish Green Party, which has two Members of the Scottish Parliament (MSPs) has renewed a call for £100 million to be allocated to a home insulation programme and to help encourage the spread of domestic microgeneration technology in next year's Scottish budget. The Greens say Scotland could receive tens of millions of pounds in European Union funding to top up the funding, if the scheme, already agreed in a Parliamentary motion, goes ahead. (4)

The scheme is modeled on one developed by Green councillors in Kirklees, Yorkshire, and would also allow homeowners to have solar panels or windmills to generate energy attached to their homes for a share in the capital value of the house. The Kirklees scheme has been a success with more homes producing renewable energy than anywhere else in the UK and more insulation provided in one year than the total number of London homes which have benefited from the UK government's scheme. The Greens believe that the scheme is a better way of helping warm homes than the traditional extra heating-fuel money given to pensioners over the winter period, which in effect only helps heat the air above houses that cannot keep the warmth in. (5)

The Kirklees Warm Zone is one of the biggest and most comprehensive programmes to tackle domestic energy efficiency and climate change in the UK. Every home in Kirklees which is suitable for loft and cavity wall insulation will receive this work for free. It will be introduced on a house by house basis. Warm Zone will contact every householder, giving every Kirklees resident the opportunity to make their home warmer and more comfortable, contribute to reducing energy consumption and make a positive impact on the environment. The programme has support of over £20 million confirmed over a three year period. (6)

For weekly news on energy efficiency and microgeneration from around the UK see: http://www.microgenscotland.org.uk/index.php

(1) Largest Low Carbon Zone Proposed for Wales, Low Carbon Economy, December 22, 2008 http://www.lowcarboneconomy.com/community_content/_low_carbon_news/3758
(2) Multi-million pound plans announced to create Europe's largest low carbon zone, Welsh Assembly Government Press Release, 3rd December 2008. http://wales.gov.uk/topics/businessandeconomy/property/HofV/news/081203plans/?version=1&lang=en
(3) Edwards, R. Anger at fourth delay to energy plan, Sunday Herald, December 14, 2008. http://www.sundayherald.com/news/heraldnews/display.var.2475095.0.anger_at_fourth_delay_to_energy_plan.php
(4) Maddox, D. Cost-cutting Green home-insulation proposals could attract millions in ERDF funding, Scotsman, December 27, 2008. http://thescotsman.scotsman.com/politics/Costcutting-Green-homeinsulation-proposals-could.4824724.jp
(5) Kirklees Council Renewable Energy Projects, http://www.kirklees.gov.uk/community/environment/renewable/renewable-projects.shtml
(6) Kirklees Warm Zone, December 2008 http://www.kirklees.gov.uk/community/environment/energyconservation/warmzone/warmzone.shtml

6. Coal and Nuclear Ranked Lowest

Mark Z. Jacobson, a professor of civil and environmental engineering at Stanford University has conducted the first quantitative, scientific evaluation of various energy solutions by assessing their impacts on global warming, human health, energy security, water supply, space requirements, wildlife, water pollution, reliability and sustainability. (1)

Nuclear power and clean coal, which are often touted as possible solutions to the climate change problem, came out with the lowest ranking after biofuels. *"Coal with carbon sequestration emits 60- to 110-times more carbon and air pollution than wind energy, and nuclear emits about 25-times more carbon and air pollution than wind energy,"* Jacobson says.

Although carbon-capture equipment reduces 85-90% of the carbon exhaust from a coal-fired power plant, it has no impact on the carbon resulting from the mining or transport of the coal or on the exhaust of other air pollutants. In fact, because carbon capture requires roughly a 25% increase in energy from the coal plant, so 25% more coal is needed.

Meanwhile, Barack Obama has appointed Harvard physicist John Holdren as director of the White House Office of Science and Technology Policy. This was widely seen as a signal from Obama that he means business when it comes to dealing with climate change. (2)

Holdren, speaking to Corporate Watchdog Radio in 2006, identified 4 primary problems that need to be

overcome if nuclear power is to be a viable part of an overall greenhouse gas reduction strategy: economics; safety; radioactive waste and nuclear proliferation. He believes that, of these, proliferation would be the most difficult to solve. In order to increase nuclear's contribution to worldwide electricity from one-sixth to one-third the number of reactors would have to be multiplied by ten from around 350 to 3,500. These would have to be spread around the globe, not just in existing nuclear countries. If we do go for this increased nuclear contribution, but find we have not built up the wisdom and competence to manage 2–3,000 new reactors, and then there is an accident, or successful terrorist attack or proliferation disaster, we could well find that the pressure to shut down reactors is immense. We would then find ourselves suddenly without the 2–3,000 reactos we thought we were going to have. (3)

(1) Wind water and sun beat other energy alternatives, study finds. Stanford News Service 10th Dec 2008. http://news-service.stanford.edu/news/2009/january7/power-010709.html
(2) Helmore, E. Obama's revolution on climate change, Observer, December 21, 2008. http://www.guardian.co.uk/world/2008/dec/21/obama-climate-change-john-holdren
(3) Will Nuclear Power save us from global warming? Corporate Watchdog Radio, September 6, 2006. http://corporatewatchdogmedia.blogspot.com/2006/09/will-nuclear-power-save-us-from-global.html

7. EU fails to lead on Climate Change

The agreement struck by EU leaders during Climate Change talks in Poznan has been condemned as a failure by Climate Action Network Europe, Friends of the Earth Europe, Greenpeace, WWF and Oxfam. Basically, Europe has decided to off-set about two thirds of its own greenhouse gas emissions, to have consumers pay for emissions permits that polluting companies get for free and to avoid supporting poorer countries in the fight against climate change. (1)

Overall, at least half of the emissions cuts planned under the so-called Effort Sharing deal can be met through offsetting. This means that the EU is only committing to about a quarter of the cuts its needs to achieve in order to avoid catastrophic climate change. (2)

(1) WWF calls on EU Parliament to reject parts of the EU Climate and Energy Package, December 12, 2008 http://www.wwf.org.uk/what_we_do/press_centre/index.cfm?uNewsID=2553
(2) Europe fails to show climate leadership, Friends of the Earth Press Release, December 12, 2008. http://www.foe.co.uk/resource/press_releases/europe_fails_to_show_climate_leadership_1212208.html

8. Justifying the Unjustifiable

The Department of Energy and Climate Change (DECC) has launched a consultation on the Nuclear Industry Association's (NIA) application to Justify New Nuclear Power Stations. (1) Responses to this consultation, which is open to 25th March 2009, will help to inform the Justification decision itself. During 2009, the Government intends to consult further on the Secretary of State's draft decision on the NIA's application.

Under European Union regulations, companies hoping to build a nuclear facility must show the benefits outweigh the potential health risks - this is known as the Justification Process. In March 2008 the Government issued Guidance and invited nuclear companies to put forward new reactor designs by June for a justification decision. (2)

An application was made by NIA on behalf of those energy utilities interested in developing new reactors. (3) At the end of October 2008 the new Department of Energy and Climate Change (DECC) wrote to NIA seeking further information within 28 days. (4) Further information is available on the Government's Justification website. (5)

The NIA says *"...the remaining uncertainty [with regard to radiation doses] is too small to cast any significant doubt over the conclusions on radiological health detriment presented in this application".* Yet the recent German KiKK study (6) concluded that the leukemia risk near German nuclear power stations casts "significant doubt" over the official doses received by people living nearby. In other words, the official methodology used for estimating radiation doses near nuclear stations is unreliable.

The KiKK study found a 2.2-fold increase in leukaemias and a 1.6-fold increase in solid cancers among children under 5 years old living within 5 km of all German nuclear power stations. The study is important because of its large size and statistical power; second it was commissioned by the German Government - it is now officially accepted in Germany that children living near nuclear power plants develop cancer and leukaemia more frequently than those living further away.

(1) Consultation on the Nuclear Industry Association's Application to Justify New Nuclear Power Stations. Volume 1 Consultation Document. DECC December 2008. http://www.berr.gov.uk/files/file49230.pdf

(2) The Justification of Practices involving Ionising Radiation Regulations 2004: Guidance for applications relating to new nuclear power, BERR, March 2008.
http://www.berr.gov.uk/files/file45384.pdf
(3) NIA Justification Application, June 2008 http://www.defra.gov.uk/environment/radioactivity/government/legislation/pdf/nia-application.pdf
(4) Notice under Regulation 16 of the Justification of Practices involving Ionising Radiation Regulation 2004, DECC 30 October 2008. http://www.berr.gov.uk/files/file48750.pdf
(5) Justification, BERR website, accessed December 2008.
http://www.berr.gov.uk/whatwedo/energy/sources/nuclear/whitepaper/actions/justification/page45386.html
(6) New Scientist 26th April 2008
http://www.newscientist.com/article/mg19826535.300-comment-lets-take-cancer-clusters-seriously-this-time.html