

SAFE ENERGY E-JOURNAL No.52

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1. Scotland's Higher Activity Waste Policy

The Scottish Government published its finalised Higher Activity Waste Policy on 20th January 2011. The Policy document can be found at: <http://www.scotland.gov.uk/Publications/2011/01/20114928/0>

Alongside this a "Post Adoption Strategic Environment Assessment" was also published: <http://www.scotland.gov.uk/Publications/2011/01/20115159/0>

The Government has also published its response to submissions made to the consultation here: <http://www.scotland.gov.uk/Publications/2011/01/20115440/0>

Various additional documents such as a guide to Higher Activity Waste in Scotland are available here: <http://www.scotland.gov.uk/Topics/Environment/waste-and-pollution/Waste-1/16293/higheractivitywastepolicy/additionaldocs>

The Scottish Government has listened to local authorities and taken on board many of the points raised by during the consultation. Although "disposal" of Higher Activity Waste (HAW) is still included as an option the practise is quite tightly defined and will require waste to be monitored and retrievable, and any 'disposal' should be as close to the surface as practical and near to the site where it is produced.

As always the proof of the pudding will be in the eating and it will be necessary to watch how the policy is implemented. Now that near-surface disposal has been accepted as a possible option Magnox North may continue with proposals to 'dispose' of graphite sleeves at Hunterston. Even if monitoring and retrievability are built into the proposals, local residents will still be concerned because the site already has an above ground storage facility large enough to accept the graphite waste. Placing it in a near surface disposal facility means there would then be spare capacity in the Intermediate Level Waste store, implying that there may be plans to import waste to Hunterston from outside of the area. The Scottish Government says decisions on the location and materials will be explored in the Implementation Strategy.

Policy Highlights (all emphasis added to quotes)

Storage is the priority: The document clears up the confusion created by the consultation documents which seemed to say that 'disposal' was now priority: "...*Scottish Government Policy at the present time is that long-term storage is still the primary long-term management option*" (para 2.04.03)

Proximity Principle: The Policy is clear on the Proximity Principle and "...*requires that the waste should be dealt with as close as possible to the site where it is produced. This means that long-term radioactive waste management facilities should be as near to those sites as practicable so that the need to transport the waste over long distances is minimal*". (para 2.04.04)

However, treatment abroad is allowed under the policy (provided waste for disposal is returned to Scotland) (para 2.04.14). The Policy says treatment specifically excludes reprocessing. (para 2.04.0-9), although this wouldn't apply anyway because spent fuel is not defined as a waste.

Storage: There is a presumption that: "...storage facilities will be as near to the site where waste is produced as practicable". (para 2.04.21) Stores will be expected to last for at least 100 years. (para 2.04.25) Near surface storage could mean down to several tens of metres below the surface. (para 2.04.19)

'Disposal': Disposal is defined as "...placing the waste in a suitable specialised land-based facility without the intent to retrieve it at a later time". (para 2.04.26) This doesn't mean the waste can't be retrieved if that proves necessary – it just means there is **no intention** to retrieve it. (para 2.04.26)

Crucially: "*The Policy requires that disposal facilities should be **monitored** and that there should be **a capability to retrieve** waste packages and waste if necessary.*" (para 2.04.29)

The Policy does not specify what monitoring is required or how retrievability will be demonstrated. The operators will have to demonstrate this to the satisfaction of the regulators.

Near Surface: The policy doesn't prescribe a particular depth for a disposal facility but: "*The presumption in the Policy is that a disposal facility will be **as near to the surface as practicable** taking account of all factors.*" (para 2.04.30)

Near Site: And it should be "*as near to the site where waste is produced as practicable. Decisions will be made on a case by case basis and will be subject to robust regulatory requirements and the principles underlying the Policy*". (para 2.04.32)

Timing: The policy document says 'disposal' facilities need to be capable of existing for much longer time periods than storage facilities. (para 2.04.35) Whilst no specific period is prescribed it says that 300 years would be an "*acceptable period for institutional control*", which means that monitoring would be carried out for at least that long. (para 3.04.36)

Engagement and Consultation: The Scottish Government now has to develop an "Implementation Strategy" in order to implement the policy. It says ongoing engagement with stakeholders will be needed as the strategy is developed. (para 3.02.02) A Project Board will be set up, chaired by the Scottish Government with representatives from regulators, local authorities in Scotland and the Nuclear Decommissioning Authority (NDA). The Project Board will be able to set up associated supporting working groups to inform and assist which might include representatives of site operating companies, local stakeholders, including members of Site Stakeholder Groups (SSGs), the Committee on Radioactive Waste Management (CoRWM) and non-governmental organisations. (paras 3.02.03 – 04)

2. Power of Scotland Secured

Scotland could phase out all conventional fossil fuel and nuclear power stations by 2030, maintain a secure electricity supply, and generate revenue from renewable exports, according to new research by one of the world's leading energy consultants, Garrad Hassan. "*The Power of Scotland Secured*", (1) published by Friends of the Earth with backing from RSPB and WWF, sets out how Scotland could guarantee security of supply, while decarbonising half its total energy needs by 2030.

Friends of the Earth Scotland Chief Executive Duncan McLaren said: "*We already know that renewables can grow to comfortably exceed our electricity demand by 2020. (2) What this report shows is that, contrary to popular myth, the variability of renewable power need not pose a threat to the reliability of our supply in Scotland. The transmission infrastructure required to keep the lights on*

at times of low renewables output will be easily justified by the value of exports which it will make possible at times of high output. Costs to consumers are unlikely to exceed those in other future scenarios."

The report discusses the extensive use of electricity for heating, and it is assumed – in line with existing Scottish government targets - that just 11% of heat demand will be met from renewable sources by 2020, increasing to 40% by 2030. Using electric heat pumps to contribute to the renewable heat target would increase Scottish gross electricity consumption in 2030 by about 14% and would cut carbon emissions from heat by up to 60%. Heat pumps for heating can also be used to help smooth out demand thus helping manage daily peak demand. Given improved levels of insulation in line with energy saving targets, in winter there could be at least several hundred megawatts of deferrable electric heating demand in Scottish homes. However, unlike UK Government proposals which foresee the total electrification of heat by 2030 (3) this report discusses the role of anaerobic digestion, which the National Grid company says could provide almost half of UK domestic gas demand, and combined heat and power.

(1) The Power of Scotland Secured, report & summary, December 2010

<http://www.foe-scotland.org.uk/sites/files/possv6final.pdf>

(2) See for example Nuclear Free Local Authorities Briefing: Scotland's electricity needs, can they be met from renewable without recourse to nuclear? July 2010.

[http://www.nuclearpolicy.info/docs/briefings/A191_\(NB76\)_Scotland_and_renewables.pdf](http://www.nuclearpolicy.info/docs/briefings/A191_(NB76)_Scotland_and_renewables.pdf)

(3) See The All Electric Future, NuClear News No.24

<http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo24.pdf>

3. Electricity Market Reform

The Electricity Market Reforms (1) planned by the Department of Energy and Climate Change and The Treasury could jeopardise funding for the renewable technologies where Scotland aims to become pre-eminent, the Scottish Government has warned. *"Getting the EMR wrong could impact on investor confidence in the renewable energy sector in Scotland,"* the First Minister wrote in an open letter to industry, business and trade unions. *"It could see support mechanisms for nuclear generation in England at the expense of renewable energy sources and CCS (carbon capture and storage) in Scotland."* (2)

"These proposals are designed to attract greater levels of new investment into the UK's energy industry but it is vital that they are implemented in a way which enhances the sector's current plans for further increases in renewable electricity generation - both on and offshore - as well as protecting investments that have already been made," added Scottish Renewables chief executive Niall Stuart.

The electricity market reforms will skew electricity pricing to support low carbon electricity, including renewables and new nuclear plants, but the price of electricity to consumers will increase. Mr Salmond said that was "deeply unwelcome", and that the Scottish government would *"resist in the strongest possible terms"* what he called subsidies for nuclear in England. (3)

Electricity Market Reforms are likely to mean an end to the Renewable Obligation Certificate system which will mean the Scottish Government will lose its powers to set the give extra incentives to tidal stream and wave energy projects under the Scottish Renewables Obligation. WWF Scotland said *"The incentive scheme that emerges from this review must ensure that Scotland retains the option to offer targeted support to emerging renewable technologies, particularly wave and tidal power that have such potential off Scotland's coasts."* (4)

Scotland could see 22,000 new jobs in renewable energy and low carbon industry in the next four years, according to the SNP. Alex Salmond also announced 500 guaranteed apprenticeships in the

Energy industry. Recent investment from Mitsubishi and Gamesa, alongside developments in marine technology and wind farm construction are just the start of capturing Scotland's potential. (5)

- (1) See Electricity Market Reform – Derren Brown-style mind tricks, NuClear News No.25, January 2011 <http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo25.pdf>
- (2) Scotsman 17th December 2010 <http://thescotsman.scotsman.com/news/Energy-shakeup-39threatens39-Scots39-ambitions.6663465.jp>
- (3) BBC 16th December 2011 <http://www.bbc.co.uk/news/uk-scotland-12014602>
- (4) WWF Press Release 16th December 2011 http://scotland.wwf.org.uk/what_we_do/press_centre/?4487/Electricity-reform-must-deliver-renewable-progress
- (5) SNP Press Release 25th February 2011 <http://www.snp.org/node/17747>

4. Scottish Labour Proposals

Scottish Labour has unveiled plans to set up a new organisation to help Scotland become a world leader in the renewable energy sector. In February Iain Gray announced plans to set up Energy Scotland to help create over 60,000 new jobs in the next decade. (1) *“Energy Scotland will coordinate our policy on renewables such as wind and wave power **as well as nuclear**, electricity, energy efficiency, home insulation and household renewables, the grid infrastructure and coal, oil and gas.”* (emphasis added)

Mr Gray claimed the SNP government had held back the energy sector due to fragmented support and a lack of “joined-up” government. He said ministers have been “far too slow” in dealing with planning restrictions regarding onshore wind farms. (2) Over 40 per cent of potential power from new wind farms have been rejected by the SNP which is foolhardy and short sighted. We are losing jobs because the SNP government is not as pro-active as it should be.

“As well as leading companies like Pelamis who are at the forefront of technology, we must have wider ambition for the whole of Scotland which is why household renewables is a potentially huge growth area with community co-operatives, social enterprises and local government.”

Energy Scotland will lead a ‘green housing revolution’ for homes across Scotland with an initial target to have 10,000 more homes producing renewable energy in the next four years. Labour’s ambition is that by 2020 household and community renewables will be standard in new and existing houses. The plans will create 300 new jobs and 750 traineeships. The scheme will also help eradicate fuel poverty. (3)

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

The plans were welcomed by organisations across Scotland, from WWF to the STUC and the Scottish Federation of Housing Associations. (4)

Meanwhile, Linlithgow Labour MP Michael Connarty has attacked Alex Salmond over his stance against nuclear energy. Speaking in a Commons debate on EU energy policy, Mr Connarty, who is secretary of the parliamentary nuclear power group, said: *“We have a one-eyed man in the First Minister of Scotland, because he and his party are entirely against the use of nuclear power.”* He said nuclear power would continue to be needed as a baseload generator to keep the lights on. *“Hopefully, the SNP can be persuaded that nuclear power is part of the mix”*, he added. (5)

- (1) Scottish Labour Press Release 7th February 2011 <http://www.scottishlabour.org.uk/gray-reveals-energy-scotland>
- (2) Press and Journal 8th Feb 2011 <http://www.pressandjournal.co.uk/Article.aspx/2126676?UserKey=>
- (3) Labour in the Scottish Parliament 21st Feb 2011 <http://www.sarahboyack2011.com/wp-content/uploads/2011/02/Green-Deal-Launch.pdf> Also Herald 22nd Feb 2011 <http://breakingnews.heraldscotland.com/breaking-news/?mode=article&site=hs&id=N0077621298295095863A>
- (4) Labour in the Scottish Parliament 21st March 2011 <http://www.sarahboyack2011.com/wp-content/uploads/2011/02/Green-Deal-Launch-endorsers.pdf>
- (5) Edinburgh Evening News 11th Feb 2011 <http://edinburghnews.scotsman.com/edinburgh/Nuclear-attack-on-39oneeyed39-Salmond.6716223.jp>

5. Waste Substitution

In December, the Scottish and UK Governments launched a consultation on a proposal for waste substitution for the radioactive waste arising from reprocessing contracts with overseas customers at Dounreay. (1) Instead of returning customers their radioactive waste at Dounreay the proposal is to send a radiologically equivalent amount of radioactive waste from a different waste stream - probably vitrified waste at Sellafield. The Consultation closed on 11th March 2010.

In the 1980s and 1990s, the UK Atomic Energy Authority (UKAEA) signed reprocessing contracts with research reactors in Australia, Belgium, Germany and Italy. Unlike electricity generating reactors, research reactors tend to use highly-enriched (weapons grade) uranium fuel. So reprocessing at Dounreay extracted unused uranium, rather than the plutonium extracted at Sellafield. And the waste was cemented into containers at Dounreay rather than turned into glass blocks as at Sellafield. Some of Dounreay's customers do not have facilities for handling the type of waste produced at Dounreay - cemented Intermediate Level Waste (ILW) - or even have plans to develop them. Without substitution the government says this radioactive waste would most likely have to remain in the UK until an overseas facility was ready to receive it. On the other hand many countries have facilities for the type of waste produced at Sellafield - vitrified radioactive waste - or have plans for such facilities. And Sellafield already has plans in place for transporting vitrified high level waste back to its customers.

The NFLA Secretariat responded to the consultation by supporting a submission made by Shetland Islands Council. SIC said it does not agree that waste substitution is the best option in this case and would suggest that the wastes are retained and managed at Dounreay. This would remove the need for unnecessary transport of intermediate and high level waste by sea to overseas owners. As highlighted in the consultation document the amount of waste is small in relation to the overall inventory and there is space in the existing stores at Dounreay to manage it. The Council also said it believes that the Government rather than unnecessarily transporting a substituted waste back to the country of origin, due to their lack of suitable storage facilities, should instead seek a financial contribution from the countries involved for managing the waste at Dounreay.

The SIC submission also highlighted the Council's opposition to Dounreay being used for the treatment or management of wastes from any other sites.

- (1) Scottish Government December 2010 <http://www.scotland.gov.uk/Publications/2010/12/03093403/0>

6. Dounreay News

- Dounreay's site closure programme is being cut back to fall into line with a £150m spending limit and prepares for the appointment of a new parent body organisation for the site licence company. Dounreay Site Restoration Ltd spent much of 2010 months making adjustments to

the long-range forward plan. The revised programme will become the basis upon which two consortia compete to become the new parent body of DSRL. Over the next few years work will include the development of new facilities such as an unirradiated fuels characterisation facility, a process line for fast reactor fuel waste, construction of a low-level waste repository and dismantling facilities for the fast reactors. (1)

- An estimated 2000 jobs will disappear over the next 15 years or so as the clean-up and decommissioning nears completion. (2) A multi-million pound programme has been set up to help workers and businesses adjust to the closure. Caithness Chamber of Commerce is helping employees of affected businesses find new opportunities. (3)
- On February 7th the UK Government launched a consultation on options for the long-term management of the plutonium currently stored in this country. (4) There are currently about 112 tonnes of civil separated plutonium stored in this country. This includes about 28 tonnes of material belonging to overseas customers. Of the 84 tonnes owned by the UK, most is at Sellafield, but 2 tonnes is located at Dounreay. The consultation document says it is likely that the plutonium would be consolidated at one site at the earliest opportunity for security and cost reasons, and certainly before 2078 when decommissioning at Dounreay is expected to be complete. The UK Government's preliminary view is that plutonium should be used as MOX (mixed oxide) fuel in conventional reactors.
- The 2010 clean up of the seabed near Dounreay is captured in a new film on YouTube. Over 400 radioactive particles were retrieved, of which 81 were deemed to pose a "significant" risk to health: <http://www.youtube.com/watch?v=3dZ5bcNAowI> (5)
- Dounreay Site Restoration Ltd has selected Graham Construction from Northern Ireland as its preferred bidder for the design and build of the new low-level radioactive waste disposal facility. (6) The contract is for the design and construction of two sub-surface vaults for the disposal of solid low-level radioactive waste from the site clean-up. DSRL has planning consent for up to six vaults adjacent to the site but hopes to reduce the number that need to be built through waste minimisation practices in decommissioning. The prospect of rock-blasting at the site is causing fresh concern to neighbouring residents. DSRL intends seeking consent to carry out blasting after the construction begins in April. Householders and crofters in the small settlement of Buldoo are concerned about the added nuisance this will cause to them and their livestock. (7)

- (1) DSRL 16th December 2010 <http://www.dounreay.com/news/2010-12-16/dounreay-updates-site-closure-plan>
- (2) DSRL 2nd March 2011 <http://www.dounreay.com/news/2011-03-02/business-group-gets-22m-for-dounreay-shutdown-plan>
- (3) Scotsman 3rd March 2011 <http://news.scotsman.com/environment/Dounreay-workers-handed-jobs-lifeline.6727548.jp>
- (4) <http://www.decc.gov.uk/assets/decc/Consultations/plutonium-stocks/1243-uk-plutonium-stocks.pdf>
- (5) DSRL 11th November 2010 <http://www.dounreay.com/news/2010-11-11/new-seabed-machine-cleans-up-429-fuel-fragments>
- (6) DSRL 13th January 2011 <http://www.dounreay.com/news/2011-01-13/dsrl-names-preferred-bidder-for-llw-contract>
- (7) John O Groat Journal 1st December 2010 http://www.johnogroat-journal.co.uk/news/fullstory.php/aid/8963/Fears_over_blast_plan_at_radioactive_dump_site.html

7. Submarine Dismantling Project

As reported at the NFLA Steering Committee in Dundee in January, the MoD has started a second consultation for statutory bodies. The documents for this are available on the SDP website:

<http://www.submarinedismantling.co.uk/DocumentLibrary.html> A public consultation is expected to take place in the second half of 2011.

The Navy will need to dismantle a total of 27 old nuclear submarines, eighteen of which have already been decommissioned and are stored at Devonport and Rosyth, where dismantling could be carried out. Although dismantling involves low-level radioactivity and is less risky than the de-fuelling or refuelling that is already done in Devonport, the image of a “nuclear scrapyards” raises the hackles of some local people. The Plymouth Herald debated the issue in December. (1)

The reactors that power Britain's naval submarines are "potentially vulnerable" to fatal nuclear accidents because they fail to meet modern safety standards, according to a heavily censored report declassified by the Ministry of Defence. Yet the reactors are being installed in a new £10bn fleet of Astute submarines. And they are still under consideration for the submarines due to replace those that carry Trident nuclear missiles from 2028. John Large, the consulting nuclear engineer who helped oversee the salvage of the stricken Russian submarine, Kursk, after it sank in August 2000, said the document revealed "*very serious shortcomings*" in the present generation of submarine reactors. "*These include doubts about the survivability of the submarine after a nuclear reactor malfunction, lack of a passive shut-down system, and strong hints that the reactor plant could fail when subject to what should be tolerable levels of hostile action.*" (2)

- (1) Plymouth Herald 9th December 2011 <http://www.thisisplymouth.co.uk/news/Does-city-need-submarine-scrapyard-work/article-2987011-detail/article.html>
- (2) Guardian 10th March 2011 <http://www.guardian.co.uk/world/2011/mar/10/royal-navy-nuclear-submarine-reactor-flaws>

8. Chapelcross

Even though the Chapelcross nuclear station in Dumfriesshire is closed with decommissioning underway, the site has around 375 employees, 50 agency staff and 100 contractors. Its contribution to the area's economy is worth between £27m and £30m-a-year, with 80 per cent of workers living within nine miles of the plant and 97 per cent within 20 miles. The end of defuelling in 2012 will bring with it a cut in staffing, probably by about 80 to 100 people. It is hoped this can be achieved through voluntary redundancies. Further reductions are planned at the end of the hazard reduction programme, when staffing levels will drop to about 60. Chapelcross' care and maintenance phase will last until 2095 when final site clearance will take place, with the reactor buildings brought down. (1)

- (1) Carlisle News and Star 14th Feb 2011 <http://www.newsandstar.co.uk/news/news-focus/chapelcross-nuclear-site-clean-up-work-will-continue-until-2095-1.808650?referrerPath=2.880/home>

9. Canadian Waste Transports.

The NFLA has urged the UK government to ban a transatlantic shipment of radioactive material which will pass through waters off the north of Scotland. The “deeply alarming” plan is to transport 16 bus-sized radioactive steam generators by sea from Canada to be cleaned up at the Studsvik recycling plant in Sweden. The three-week journey aboard the MV Palessa would include passage through the Pentland Firth between Caithness and Orkney. The Scottish Government said it would also be seeking assurances about the safety of the cargo.

Ontario-based power company Bruce Power was granted a licence by the Canadian Nuclear Safety Commission to transport the old steam generators to Sweden. A date for the ship to embark has not yet been finalised. Studsvik will decontaminate around 90 per cent of the materials and sell the resultant scrap metal on the open market. According to the Canadian Coalition for Nuclear Responsibility, the radioactive levels of the generators exceed the legal limits of the International

Atomic Energy Agency (IAEA) regulations for the safe transport of radioactive materials by 50 times. Orkney Islands Council (OIC) said it will investigate the type of material and the proposed route. (1)

KIMO, says the shipment will have to go through UK, Norwegian, Danish and Swedish territorial waters after receiving permission from each Government. KIMO International is writing to these Governments to outline its concern and request that they refuse permission for these shipments which help set a precedent that it is acceptable to ship radioactive materials around the world for treatment.

President of KIMO, Albert de Hoop stated, who is Mayor of Ameland, a small island which is part of the West Frisian Islands off the North coast of the Netherlands, says: *“These shipments go completely against the proximity principle where the communities which have benefited from the power produced should deal with the waste generated. Instead coastal communities all along the transport route are being put at risk and the treatment will result in emissions to the Baltic Sea, which is already one of the most radioactive in the world.”* (2)

(1) Scotland on Sunday 13th Feb 2011 <http://www.scotsman.com/news/39Ban-radioactive-cargo-ship-from.6717096.jp>

(2) See KIMO website <http://www.kimointernational.org/Home.aspx>

10. Renewable Progress

- A Bristol-based company said it plans to install Scotland’s first tidal energy farm in 2013. Marine Current Turbines (MCT) said the project at Kylerhea, narrows between Skye and the Scottish mainland, could supply electricity to 4,000 homes. The company already operates a commercial-scale tidal power device at Strangford Lough in Northern Ireland. It would install a group of four SeaGen tidal units at Kylerhea at a cost of £35m. (1)
- The Scottish Government has approved a new 4.5 Megawatt hydro electric scheme in Sutherland. The scheme on the Maldie Burn, near Kylestrome on the Reay Forest Estate, will create about 25 jobs during construction. Developer RWE Npower Renewables, submitted an application in 2009. (2)
- Up to 300 jobs are to be created in Scotland after Gamesa, the Spanish wind energy giant, disclosed plans to build a new technology centre in Glasgow. The group, which plans to invest €150 million (£127 million) in Britain by 2014. Gamesa, which is part-owned by ScottishPower parent company Iberdrola, signed an initial contract to set up a manufacturing base in Dundee (3)
- Japanese engineering giant Mitsubishi today announced a major investment in the Lothians expected to create up to 200 jobs over the next five years. Mitsubishi Power Systems Europe Ltd is to invest up to £100 million in an engineering facility to carry out research and development into offshore wind turbine technology. The company will create a Centre for Advanced Technology in the Edinburgh area to pioneer "game-changing" green energy technologies and develop them for mass production. (4)
- Thousands of Scottish homes and businesses are to be fitted with photovoltaic panels in a £200m investment led by Stirling renewable energy firm Emotion Energy. Only structures with south-facing roofs will be considered - in a bid to harness as much of the sun’s power as possible. The project will also generate cash for community-funded charities over the next 25 years. *“People believe solar panels need a lot of sun and that is just not the case,”* said Mike Cox of Heriot-Watt University, which is today hosting a conference on the risk to businesses caused by climate change. Daniel Borisewitz, Scottish Renewables policy manager for bioenergy and heat, said 12 businesses and householders a week had installed their own solar panel systems. (5)

- (1) BBC 2nd December 2011 <http://www.bbc.co.uk/news/uk-scotland-highlands-islands-11898739>
- (2) Scotsman 18th January 2011 <http://thescotsman.scotsman.com/news/Hydro-scheme-gets-the-goahead.6693745.jp>
- (3) Scotsman 21st Jan 2011 <http://thescotsman.scotsman.com/scotland/Spanish-wind-farm-giant-plans.6697521.jp>
- (4) Evening News 3rd Dec 2010 <http://edinburghnews.scotsman.com/news/New-Mitsubishi-facility-to-create.6648943.jp>
- (5) Scotsman 21st Jan 2011 <http://thescotsman.scotsman.com/alternativeenergysources/Dreich-skies-can-still-drive.6696232.jp>