



SAFE ENERGY E-JOURNAL No.60

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This briefing does not deal with the UK Government's proposed new reactor programme. For an update on developments to do with new reactors see here:

<http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo54.pdf>

If you would like to receive Daily Nuclear News updates by e-mail you can sign up here:

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1 Climate Change

It is clear the world is going to have to make some serious reductions in carbon emissions over the next 15 years to have any chance of avoiding dangerous climate change. 97% of climate scientists now agree that humans are causing global warming, so because this subject has such a huge impact on the nuclear debate it's worth having a look at some of the numbers involved. (1)

There are three important numbers (2) to look at:

2°C - every signatory to the UN Copenhagen Climate Talks in 2009 agreed that we must stop average global temperatures rising above this number.

To have a reasonable chance of staying below 2°C we have to limit future emissions to **565 billion tons** (Gigatonnes Gt). The problem is that we are releasing 30Gt every year, and this is going up at 3% a year. That means we have about 15 years before we reach the threshold.

The number of tons of carbon in already proven fossil fuel reserves is **2795Gt** - five times the amount needed to take us to 2°C warming. (3)

Two things stem from this. Firstly we need to start making big reductions in emissions now, not in ten years time when Hinkley C might start operating, or 15 years time when Wylfa and Oldbury might open. Secondly, if we go ahead with shale gas extraction, we need to be sure there is a legal mechanism to keep other fossil fuels in the ground.

A report for the World Bank says a global average temperature increase of 4°C could be potentially devastating: the inundation of coastal cities; increased malnutrition; many dry regions becoming dryer, wet regions wetter; unprecedented heat waves in many regions, especially in the tropics;



substantially exacerbated water scarcity in many regions; increased intensity of tropical cyclones; and irreversible loss of biodiversity, including coral reef systems. (4)

1. Guardian 28th May 2013 <http://www.guardian.co.uk/environment/climate-consensus-97-percent/2013/may/28/global-warming-consensus-climate-denialism-characteristics>
2. For an inspiring explanation of these numbers watch "Do The Math" which chronicles the work of Bill McKibben <http://www.youtube.com/watch?v=IsIfokifwSo>
3. Unburnable Carbon: Are the World's Financial Markets Carrying a Carbon Bubble, Carbon Tracker, March 2012 <http://www.carbontracker.org/wp-content/uploads/downloads/2011/07/Unburnable-Carbon-Full-rev2.pdf>
4. World Bank 18th November 2012 <http://www.worldbank.org/en/news/press-release/2012/11/18/new-report-examines-risks-of-degree-hotter-world-by-end-of-century>

2 Scottish Energy Policy

Energy Policy in an Independent Scotland

A leaked Scottish government document looking at energy policy in an independent Scotland discusses the need to move towards renewable sources of energy and away from what it calls "*damaging, price volatile fossil fuels*". It claims greater acceptance of renewable energy like wind power projects in Scotland could help other parts of the UK, where it is less popular.

Little other detail is new, but it confirms that the Scottish government would like to maintain a UK-wide energy market after independence. It also restates the Scottish government's preference for the current UK-wide subsidy for renewable energy to continue after independence.

A Scottish government spokeswoman said the draft paper will inform the work of the expert commission announced on 7th July. The commission will advise on energy regulation in an independent Scotland and its work will in turn inform the white paper on independence to be published in the autumn. (1)

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1. BBC 25th July 2013 <http://www.bbc.co.uk/news/uk-scotland-scotland-politics-23428903> Telegraph 25th July 2013 <http://www.telegraph.co.uk/news/uknews/scotland/10200789/Leaked-Scottish-Government-report-attacks-damaging-oil.html> and Herald 25th July 2013 <http://www.heraldscotland.com/politics/referendum-news/snp-document-stresses-need-to-move-away-from-fossil-fuels.21697987>

Climate Plans - RPP2

The finalised Scottish Climate Change Plan (RPP2) was published on 27th June 2013, (1) but the plan has annoyed environment groups who say the Government has simply improved the presentation



and design of the draft report without changing the substance - Ministers have failed to listen to stakeholders or other MSPs and introduce new radical and ambitious proposals. (2)

The Scottish Government published “*Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027: The Draft Second Report on Proposals and Policies*” on 29 January 2013 – better known as RPP2. (3) A Scottish Parliamentary Information Centre (SPICE) briefing provides a useful summary. (4)

Earlier in June it was announced that Scotland had failed to meet its climate change targets for the second consecutive year. (5) Emissions narrowly exceeded the official target by 0.8m tonnes of carbon dioxide equivalent (CO₂e) in 2011 and 1.1m tonnes in 2010. The Government insisted the statistics showed Scotland was on track to meet its overall goal of reducing greenhouse gas emissions by 42% by 2020. Environmental campaigners described the figures as disappointing, but Climate Change Minister Paul Wheelhouse insisted that Scotland's overall figures were still the best in Europe, with a near 30% cut in emissions against 1990 levels. (6)

Environment groups urged the government to "up its game", and produce more radical policies in the finalised RPP2. They argued that the missed target underlined the Government's reluctance to take tough action on transport emissions, coal production and energy efficiency. (7)

Energy Action Scotland said emissions from housing make up a quarter of emissions in Scotland. Meanwhile, more than a third of Scots live in fuel poverty. Tackling climate change tackles fuel poverty, creates jobs in insulation and saves money on healthcare costs - preventative spend at its best. It called for radical improvements to the draft RPP2. As part of the Existing Homes Alliance coalition Energy Action Scotland is calling on the housing minister to bring forward minimum standards of energy efficiency in Scotland's housing. (8)

The finalised RPP2 was lambasted by Tom Ballantine, chair of Stop Climate Chaos Scotland. He said the plan is not the step change required to deliver the Climate Change Act especially as the first two targets have been missed:

“...recommendations from MSPs from all parties and stakeholders have not resulted in any significant change to this important plan. Relying on vague proposals, with delayed action until the mid 2020s, instead of financed policies in the short term, tells us that some Ministers are still not taking this anywhere near seriously enough.” (9)

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1. Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027, Second Report on Proposals and Policies, June 2013, <http://www.scotland.gov.uk/Resource/0042/00426134.pdf>
 2. Guardian 27th June 2013 <http://www.guardian.co.uk/uk/scotland-blog/2013/jun/27/scotland-climate-targets>
 3. Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027. The Draft Second Report on Proposals and Policies <http://www.scotland.gov.uk/Resource/0041/00413150.pdf>
 4. Scottish Parliament 5th Feb 2013 http://www.scottish.parliament.uk/ResearchBriefingsAndFactsheets/S4/SB_13-07.pdf
 5. Scottish Government Press Release 7th June 2013 <http://news.scotland.gov.uk/News/Scotland-leads-Europe-on-climate-change-stats-f8.aspx>



6. BBC 7th June 2013 <http://www.bbc.co.uk/news/uk-scotland-scotland-politics-22813126>
7. Guardian 7th June 2013 <http://www.guardian.co.uk/environment/2013/jun/07/scotland-miss-carbon-target>
8. Scotsman 12th June 2013 <http://www.scotsman.com/news/norman-kerr-climate-action-can-end-fuel-poverty-1-2962289>
9. Stop Climate Chaos Scotland 27th June 2013 <http://www.stopclimatechaos.org/news/2013/06/27/scottish-governments-climate-plan-doesnt-add> and Guardian 27th June 2013 <http://www.guardian.co.uk/uk/scotland-blog/2013/jun/27/scotland-climate-targets>

Energy Efficiency Action Plan (EEAP)

In May the Scottish Government published a formal review of its Energy Efficiency Action Plan. (EEAP), (1) originally published in October 2010. (2) The Climate Change (Scotland) Act 2009 requires annual energy efficiency targets, an annual progress report and a formal review within 3 years. This first review says Scotland is on target to reduce energy consumption across all sectors by 12% by 2020 (compared with a 2005-7 baseline).

The Sullivan Report - 'A Low Carbon Building Standards Strategy for Scotland' - published in 2007 which recommended improving building standards so that all new buildings are net zero carbon buildings by 2016/17 is being re-visited because of the economic downturn. Andrew Warren, director of the Association for the Conservation of Energy (ACE), has written to Finance Secretary John Swinney and Local Government and Planning Minister Derek Mackay, expressing his concern about the delay in implementing the tough new measures and watering down some requirements because it will have a "severe and damaging" affect on businesses. (3)

Regulations are being developed under the Climate Change Act to require the energy performance of existing non-domestic buildings to be assessed; new energy efficiency standards for social housing will be introduced in Summer 2013, and there will be a consultation by Spring 2015 on draft regulations for a minimum standard for private sector housing to be introduced in 2018.

There is more information on the efficiency standards in Scotland's Sustainable Housing Strategy (4)

The Government is committed to developing regulation for the private housing sector and has established a working group to do this. The success of standards in the social rented sector shows that minimum energy performance standards can cut fuel poverty and transform cold, damp houses into warm, dry homes. But the Existing Homes Alliance recommends that new performance standards should be applied from 2016, rather than 2018 – a date which gives an ample lead-in time for landlords and home owners. It will drive demand for the Green Deal and ECO, and lead to jobs and supply chain opportunities in Scotland (3)

The Sustainable Housing Strategy also says that by 2020, all homes should have loft and cavity wall insulation where this is possible and every home with gas central heating should have an energy efficient boiler with appropriate controls. Over 2013/14 the Government is investing £79 million to help people to keep their energy bills down with thousands of homes across Scotland receiving new measures like solid wall insulation and better heating systems. The Government says it is actively working with councils and energy companies to ensure that Scotland continues to get its fair share of funding for efficiency programmes.



An interest-free loan scheme was unveiled at the beginning of August. Loans of up to £10,000 will be available for home owners to adopt a range of renewable heat and electricity technologies, such as heat pumps, solar panels, micro-wind turbines, or biomass boilers with funding directly targeted at homes in fuel poverty, allowing households to access subsidy schemes, such as the feed-in tariff for renewable electricity generation or the Renewable Heat Premium Payment, and then use the new income to pay off the loans. The move is in stark contrast to the UK Government's Green Deal energy efficiency loan scheme, which has been criticised for offering interest rates of around 7%. (6)

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1. Energy Efficiency Action Plan: Formal Review, Scottish Government May 2013
<http://www.scotland.gov.uk/Resource/0042/00423520.pdf>
 2. Conserve and Save, Energy Efficiency Action Plan, Scottish Government, October 2010,
<http://www.scotland.gov.uk/Resource/Doc/326979/0105437.pdf>
 3. Herald 13th May 2013 <http://www.heraldscotland.com/news/home-news/alarm-at-plans-to-water-down-green-standards-for-buildings.21061478>
 4. Scottish Government Press Release 21st June 2013 <http://news.scotland.gov.uk/News/More-green-homes-for-Scotland-197.aspx> & Scotland's Sustainable Housing Strategy 21st June 2013
<http://www.scotland.gov.uk/Resource/0042/00425697.pdf>
 5. Existing Homes Alliance Press Release 21st June 2013
<http://www.existinghomesalliancescotland.co.uk/uploaded/files/ExHA%20%20PR%20on%20SHS%20Final%20june%202013.pdf>
 6. Business Green 2nd August 2013 <http://www.businessgreen.com/bg/news/2286406/scots-offered-interestfree-loans-for-energy-efficiency-improvements>

District Heating Plan

The Scottish Government has published a District Heating Action Plan (1) in response to an Expert Commission on District Heating which delivered its recommendations in November 2012. (2) The Action Plan sets out a roadmap for working in partnership with the wider public sector, business and industry to support the development of district heating in Scotland.

The Scottish Government's Outline Heat Vision (3) sets out ambition plans to decarbonise Scotland's heat supply by 2050, with significant progress by 2030. There needs to be a holistic approach to how we deliver heat, to ensure a long-term affordable and sustainable heat supply for the future. A large-scale heat network may take heat from several sources including gas-fired Combined Heat & Power (CHP) plants, renewable energy such as geothermal, solar and biomass, stored heat from intermittent renewable electricity generation and heat recovered from industrial processes. Scotland now has district heating schemes varying in size from a handful of buildings on farm steadings to thousands of homes in urban areas like Glasgow and Aberdeen. And there is even greater opportunity for expansion, to create large-scale integrated heat networks to heat our towns and cities.

The Government is working with registered social landlords to see how district heating can help them gain more control over the costs of heating for their tenants. Aberdeen's gas-fired CHP scheme is reducing carbon emissions by up to 45% across all the buildings in the scheme. Networks heated by



gas may be the most straightforward to build initially, creating the infrastructure needed to connect more renewables and low carbon heat supplies such as recovered heat in the future.

The Scottish Cities Alliance is committed to rolling out the Heat Mapping Programme for Scotland, with heat maps completed for Inverness and Perth, and about to start in Edinburgh and Glasgow; Aberdeen Heat & Power are continuing to extend their heat network, with a heat main now taking the system into the city centre; Sustainable Glasgow has set up a District Heating Strategy Group to develop proposals for an integrated city network, to coordinate major public and private projects currently in planning and development; and, in Wick, a biomass district heating scheme is providing heat to the Pultneytown Distillery and social housing, with plans for further expansion.

The plan includes a Call for Evidence on the investment needed in heat networks over the next few years. In particular, to address the barriers to creating large-scale integrated heat networks, with the capacity to expand in the future.

WWF Scotland said “*this action plan is a welcome first step in tackling this. However, if we are to match the ambition of countries such as Denmark, where more than half of all homes are connected to district heating, all the recommendations from the Expert Commission need to be fully adopted.*” (4)

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1. District Heating Plan: Response to the Expert Commission on District Heating, Scottish Government May 2013 <http://www.scotland.gov.uk/Resource/0042/00423849.pdf>
 2. Expert Commission on District Heating: Recommendations to the Scottish Government, 14th November 2012 <http://www.scotland.gov.uk/Resource/0040/00408383.pdf>
 3. Outline for a Draft Heat Vision, Scottish Government, 29th January 2013. <http://www.scotland.gov.uk/Resource/0041/00413386.pdf>
 4. WWF Scotland 31st May 2013 http://scotland.wwf.org.uk/what_we_do/press_centre/?6620/Action-plan-to-reduce-energy-bills--WWF-Scotland

3 Scotland and Nuclear Power

There will be no nuclear new build in Scotland, but the Scottish Government has not ruled out extending the operating life of existing reactors, to maintain security of supply over the next decade while the transition to renewables and clean thermal generation takes place. This is according to the Draft National Planning Framework-3 (NPF3) which has been published for consultation. (1)

NPF3 is key to “*supporting sustainable economic growth and the transition to a low carbon economy*”. The document gives a good summary of Government commitments for the energy sector which includes achieving a number of long-term targets:

- reduce total final energy demand by 12% by 2020 (from the 2005-2007 baseline), covering all fuels and sectors;



- achieving a carbon intensity of 50g CO₂/kWh of electricity generation in Scotland, an 83% reduction on the estimated 291g CO₂/kWh in 2011;
- meeting at least 30% of overall energy demand from renewables by 2020 (this includes generating the equivalent of at least 100% of gross electricity consumption from renewables by 2020, with an interim target of 50% by 2015);
- sourcing 11% of heat demand and 10% of transport fuels from renewable sources by 2020;
- achieving at least 500MW of renewable energy in community and local ownership by 2020; and
- by 2050 Scotland will have a largely decarbonised heat sector with significant progress made by 2030.

The Government proposes that NPF3 should support the delivery of the National Renewables Infrastructure Plan (NRIP) which means, for example, promoting the ports of Leith, Methil and Dundee as hubs for offshore wind turbine manufacture, because of their proximity to the first round of offshore wind developments in Scottish Territorial Waters. NPF3 should recognise the national significance of these locations and emphasise the need for that to be reflected in development plans for the east of Scotland.

The Government also says NPF3 should support the implementation of the Pentland Firth and Orkney Waters wave and tidal projects which are coming forward in the short term. As well as onshore infrastructure requirements, wider economic and development opportunities extend to a number of ports and harbours including Lyness, Hatston, (both Orkney) and Scrabster (Caithness). Prioritising development in support of these wave and tidal projects could assist with the restructuring of the Caithness economy, helping to offset the eventual loss of jobs and investment resulting from the decommissioning of the Dounreay nuclear facility.

In Argyll, the Campbeltown/Machrihanish hub offers a key opportunity to support emerging opportunities for wind, wave and tidal development off the west coast. In Ayrshire, Hunterston is a location with considerable potential to support the renewable energy sector, through test and demonstration facilities and as a site for manufacturing.

Former Labour MP Brian Wilson told a conference that the SNP government's refusal to allow more nuclear build would cause energy shortages in Scotland. This was supported by Councillor Alex Gallagher who complained that in September last year, North Ayrshire Council passed a motion he had proposed which requested that new nuclear build be included in the National Planning Framework (NPF), but the NPF consultation does not do this. Nuclear power is excluded, not on grounds of predicted need or capacity, but on purely ideological grounds. (2)

Meanwhile an updated Electricity Generation Policy Statement has confirmed the policy of not precluding life extensions for Scotland's existing nuclear stations. (3) It does, however, suggest that the Scottish Government does not expect Torness to remain open in 2030, despite the fact that if it were able to obtain the same life extension as Hunterston B, it would continue operating until at least 2033.



The Scottish Government's Draft Electricity Generation Policy Statement (4) was published on 5th March 2012. This made clear that the 100% renewable electricity target does NOT mean that Scotland will be 100% dependent on renewables. The updated Statement says it has been informed by the consultation submissions.

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1. NPF3 <http://www.scotland.gov.uk/Resource/0042/00421073.pdf>
 2. Largs and Millport Weekly News 12th June 2013
<http://www.largsandmillportnews.com/news/hunterston/articles/2013/06/12/460698-labour-man-attacks-snp-nuclear-policy/>
 3. Electricity Generation Policy Statement – 2013, Scottish Government 28th June 2013
<http://www.scotland.gov.uk/Resource/0042/00427293.pdf>
 4. Electricity Generation Policy Statement, 5th March 2012
<http://www.scotland.gov.uk/Resource/0038/00389294.pdf>

4 Scottish Radwaste

The Nuclear Decommissioning Authority (NDA) published a Strategy Paper on Intermediate Level Waste (ILW) Storage Solutions in Central and Southern Scotland in August last year. (1) The paper considered a variety of options including moving waste within the Hunterston nuclear reactor facility and potential for movements of waste between other sites, such as Torness and Rosyth.

The Nuclear Free Local Authorities (NFLA) called on the NDA to drop altogether, rather than postpone, consideration of the storage of Torness waste at Rosyth, and consideration of transporting Torness waste to the Hunterston store. (2)

The NDA has now published its preferred option for ILW in Central and Southern Scotland (April 2013). This rejected the idea of building any new wastes stores for ILW. Instead the NDA has decided to stick to its existing policy of storing ILW where it arises - except for consolidating Hunterston B wastes in the new Hunterston A waste facility. (3)

- Meanwhile a plan to ship 16 radioactive steam generators across the North Atlantic from Canada for recycling in Sweden has been cancelled after delays caused by public opposition. An agreement was reached in 2009 between Bruce Power and Swedish company Studsvik but the move has been strongly opposed by aboriginal groups, the Bloc Quebecois, the NDP and a number of community organizations over the past two years. (4)

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1. NDA 22nd August 2012 <http://www.nda.gov.uk/news/ilw-storage-scotland.cfm>
 2. Radioactive Waste Management Policy Briefing No.35 Scottish ILW Storage Policy.
http://www.nuclearpolicy.info/docs/radwaste/NFLA_RWB_35_Scottish_ILW.pdf
 3. NDA 30th April 2013 <http://www.nda.gov.uk/news/ilw-scotland-preferred-option.cfm>



4. Ottawa Citizen 27th July 2013

<http://www.ottawacitizen.com/news/Plan+ship+radioactive+material+Sweden+recycling+cancelled/8715633/story.html>

5 Radioactive Contamination

Dalgety Bay

Gordon Brown MP has called on the Ministry of Defence to pay for the clean-up of the beach at Dalgety Bay which is contaminated by radiation after an investigation published by the Scottish Environment Protection Agency (Sepa) found that the MoD was responsible for the radioactive particles and high-activity radiation at Dalgety Bay. But the MoD is still refusing to accept responsibility.

Sepa's investigation confirmed that the MoD deposited a large amount of ash and other waste, known as clinker, on the coast at Dalgety Bay before the town was developed, which created radioactive sources. The agency found that significant amounts of material remained buried on the coast where they continued to decay and re-contaminate the area. The MoD disputed the findings and questioned the "*adequacy and validity*" of Sepa's approach to the report. (1)

Mr Brown, who has already called two key debates at Westminster on the issue, called a third on 9th July. He told Parliament that in the next few months Sepa will have to designate this area, which is part of the Fife coastal path, as the only radiation-contaminated area in the United Kingdom if action is not taken by the MOD as soon as possible. (2)

Dalgety Bay is already the first area of the United Kingdom where a risk assessment study has had to be done to measure the extent of radiation contamination and where what is called an appropriate person report—a report under the legislation dealing with radiation contamination—has been produced and has concluded that the polluter of the area is indeed the MoD.

Mr Brown highlighted two documents from 1990 and 1992 which showed that the MOD was responsible for the presence of the radioactive particles. (3)

The Committee on Medical Aspects of Radiation in the Environment (COMARE) agreed last year to combine the two current working groups on contamination of the environment around Sellafield & Dounreay into a single group that will also cover Dalgety Bay, and any other sites that the committee is made aware of. The working group held its first meeting on 3rd July 2012. (4) COMARE was asked by Scottish Government to provide a report on cancer incidence in the area around Dalgety Bay. It is expected to publish this report later this year. In the meantime COMARE provided an interim report in December 2012. (5) This report highlighted an analysis by the NHS Scotland Information Services Division (ISD) for the period 2000-2009 which showed two types of cancer to have statistically significantly raised incidences in the area around Dalgety Bay. (6)

The full Committee met on 10th July when it agreed that on available evidence there are sources of potential harm to the public at Dalgety Bay. Continuing a programme of demarcation and



monitoring was not a long term viable solution and remediation should start as quickly as possible. The monitoring and removal of radioactive sources should continue at a rate which should be at least current levels. (7)

Brown concluded that:

“The Ministry of Defence is trying to persuade residents in the next town, Rosyth, that they should become the site for the decommissioning, dumping and breaking up of nuclear submarines, telling them that there is no health hazard involved ... if the Ministry of Defence cannot be trusted to deal with radiation contamination at Dalgety Bay, how can they [be] trust[ed] over the dismantling and breaking up of submarines at Rosyth?”

The Dalgety Bay Appropriate Person Report and Dalgety Bay Radioactive Contaminated Land Risk Assessment can be found here:

http://www.sepa.org.uk/radioactive_substances/publications/dalgety_bay_reports.aspx

Kinloss

Radiation monitoring is to be carried out on sand dunes near to the former RAF base at Kinloss. Moray Council has said monitoring will be carried out at Findhorn in August. Geophysical surveys have suggested the land may be contaminated by radiation. It is believed large numbers of aircraft were broken up and buried there at the end of World War II. Some of the parts may have been coated with radium-based paint, which was used to illuminate instruments. (8)

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1. Scotsman 29th June 2013 <http://www.scotsman.com/news/environment/gordon-brown-mod-must-fund-dalgety-bay-clean-up-1-2982336>
 2. Hansard 9th July 2013 : Column 331
 3. Guardian 9th July 2013 <http://www.guardian.co.uk/politics/2013/jul/09/hugh-muir-diary-gordon-brown> and <http://www.guardian.co.uk/environment/2013/jul/09/gordon-brown-mod-dalgety-bay-fife>
 4. Cancer Incidence in the area around Dalgety Bay, COMARE, December 2012. <http://www.scotland.gov.uk/Topics/Environment/waste-and-pollution/Waste-1/16293/8969/dalgetybaycomarereport>
 5. COMARE website http://www.comare.org.uk/comare_work.htm
 6. See also Sunday Herald 11th November 2013 <http://www.robedwards.com/2012/11/revealed-the-cancers-that-could-be-linked-to-radioactive-contamination.html> Rob Edwards website gives access to two further COMARE reports which show a near-doubling in the incidence of cancers among people living near Dalgety Bay.
 7. SEPA Press Release 10th July 2013 http://www.sepa.org.uk/about_us/news/2013/sepa_statement_regarding_dalge.aspx
 8. BBC 1st Aug 2013 <http://www.bbc.co.uk/news/uk-scotland-north-east-orkney-shetland-23531873> & Herald 2nd Aug 2013 <http://www.heraldscotland.com/news/environment/radiation-tests-at-ex-raf-air-base.21763256>



6 Dounreay Notes

- Dounreay's operators say there will be no underwater sweeps for radioactive particles this year. The seabed has been scanned for several months each year since 2008. By the end of 2012 2200 particles had been removed. 409 of these were considered to be significant in terms of their potential impact on health. (1) Meanwhile Dounreay Site Restoration Ltd (DSRL) is to upgrade detection equipment used to search for radioactive particles on beaches, but have also applied to reduce the frequency of monitoring on Sandside Beach from monthly to quarterly. (2)
- Hazard reduction at Dounreay has taken a big step forward as tanks of highly active liquid waste have been virtually emptied and the waste cemented into drums. The liquid waste arose from the reprocessing of research reactor spent fuel. The acidic liquor, known as raffinate, was stored in underground storage tanks and accounts for approximately 80 per cent of the waste inventory at Dounreay in terms of radioactivity. Over 4,700 drums have been generated to date. Now nitric acid will be added to the tanks to remove remaining solids, and then the tanks will be cleaned out using nitric and hydrofluoric acid. The tanks will be flooded with the solution and then pumped out. Once the tanks have been decontaminated to meet Low Level Waste criteria, they will then be removed and disposed in the new LLW facility. (3)
- Decommissioning fast breeder reactors can be demanding and hazardous not just because of the highly radioactive spent fuel, but also because they use liquid metal as a coolant. This substance is usually sodium or a sodium-potassium alloy NaK, which can react with water to release hydrogen and large quantities of heat – in other words it can explode. Much of the sodium coolant at Dounreay has now been turned into salt water, but as decommissioning moves into the next phase, the challenge is to tackle the destruction of the remnants of sodium still inside the reactor vessel – the spent fuel and components will all be covered in a residual film of sodium. It is estimated that around 3.5 tonnes of residual NaK remain inside the pipes and vessel of the DFR, and a further 9 tonnes of sodium are still estimated to be in the PFR reactor vessel. (4)
- A robotic crane will be used to remove radioactive waste from the 65.4m Dounreay Shaft. Highland Council has given planning permission in principle for the construction of the infrastructure needed to make this work possible. Radioactive waste was disposed there from 1959 to 1977, when an explosion ended the practice. (5)
- The NDA Annual Report says that up to April 2013 five shipments of so-called legacy fuel have been transferred from Dounreay to Sellafield for reprocessing and storage, and four shipments of research reactor waste have been made to Belgium. (6)

1. Caithness Courier [not on web] 12th June 2013



2. John O’Groat Journal 8th May 2013 <http://www.johnogroat-journal.co.uk/News/Dounreay-upgrades-hotspot-detection-kit-07052013.htm> DSRL 13th June 2013 <http://www.dounreay.com/news/2013-06-13/dounreay-modifies-beach-monitoring-system>
3. DSRL 10th May 2013 <http://www.dounreay.com/news/2013-05-10/dounreay-reduces-raffinate-hazard>
4. STV 22nd May 2013 <http://m.stv.tv/news/highlands-islands/226417-dounreay-decommissioning-process-takes-significant-step-forward/>
5. Power Engineering 22nd May 2013 <http://www.powerengineeringint.com/articles/print/volume-21/issue-5/features/difficult-phase-at-dounreay.html>
6. BBC 5th June 2013 <http://www.bbc.co.uk/news/uk-scotland-highlands-islands-22780738>
7. NDA Annual Report 2012/3 <http://www.nda.gov.uk/documents/upload/Annual-Report-and-Accounts-2012-2013.pdf>

7 Torness & Emergency Planning

The Office for Nuclear Regulation (ONR) is finalising the size of the detailed emergency planning zone (DEPZ) and other matters relating to the Sizewell nuclear power plant offsite emergency plan following a public consultation on this plan carried out by the Suffolk Resilience Forum which advocated an increase in the size of the DEPZ. ONR will apparently advocate a small increase in the size of the DEPZ, but not to the 20 - 30kms evacuation zones which had to be implemented after Fukushima in 2011.

One of the concerns over nuclear site emergency plans raised by the Nuclear Free Local Authorities has been the availability of potassium iodate tablets. This issue came up recently at a Torness Local Liaison Committee meeting when Edinburgh Green Councillor Chas Booth asked how many potassium iodate tablets were available to give out to the local community in the event of a nuclear incident, and were there adequate numbers of tablets if a significant increase in the evacuated area is required (as occurred at Fukushima).

Emergency plans for protecting communities around the two nuclear power stations in Scotland - at Torness in East Lothian and at Hunterston in North Ayrshire - include provisions for distributing potassium iodate tablets. But although there are tablets ready for use within two or three kilometres of the plants, it is unclear how populations further away will be protected. The government’s official guidance says that authorities should be able to distribute the tablets up to 15 kilometres away, but there has been growing pressure in the wake of Fukushima to extend the zone to 30 kilometres.

The operator of Torness, EDF Energy, says that there are 11,500 tablets in stock that are distributed to the 220 households that live or work within three kilometres of the plant. The plant keeps a further 5,000 tablets for its staff, and gives the local ambulance service 200.

But when councillors on the Torness local liaison committee asked where the tablets were for the people that lived within 30 kilometres, they were referred to the local authority and to the National Health Service (NHS). Dunbar, Haddington, North Berwick and East Linton are all within that



distance, and have a combined population of 25,000. Chas Booth, asked Lothian NHS about its stocks of potassium iodate tablets, and was told they had none. When environment journalist Rob Edwards asked Lothian NHS and East Lothian Council, they both responded with a statement from the Scottish government. But the Scottish government refused to say how many pills there were, and where they were kept.

Bill Butler, a Glasgow Labour councillor who chairs the group of nuclear-free local authorities group in Scotland, condemned current plans to extend emergency zones to 30 kilometres as “totally inadequate”. This was demonstrated, he argued, by “the confusion over the simple issue of potassium iodate tablets.” (1)

Chas Booth said he was “astonished” Scottish authorities had failed to “learn the lessons from Fukushima and Chernobyl”. The SNP councillor for Dunbar and East Linton, Paul McLennan said “there is no way these tablets could be distributed to people living 15 or 30km from Torness in the event of an emergency.” (2)

For Ben Elton’s take on the Torness Emergency Plan see <http://www.youtube.com/watch?v=HMkHmaP-BLQ>

- Both reactors and Torness were forced to shut down on 23rd May after engineers became concerned about a rising tide of seaweed which might clog the reactors’ cooling system. The reactors were shut down two years ago due to an influx of jellyfish. (3) The reactors eventually re-started around 28th May. (4)
- Meanwhile, an emergency exercise near Glasgow has exposed serious weaknesses in Britain’s ability to cope with a catastrophic motorway pileup in which a nuclear bomb convoy burns and spreads a cloud of radioactive contamination over nearby communities. An internal report released by the Ministry of Defence reveals that the emergency services faced “major difficulties” in responding to the mocked-up accident near Glasgow because they had no help from MoD weapons experts for more than five hours. At times the response, which involved 21 agencies, was disorganised, the report says. Heated disputes with ambulance staff over how to handle casualties contaminated with radioactivity at the crash site caused “considerable delay”, resulting in one victim being declared dead. Other problems included outdated, paper-based communications systems, poor mobile phone signals, conflicting scientific advice on health hazards and confusion over radiation monitoring. (5)

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1. Rob Edwards 18th June 2013 <http://www.robedwards.com/2013/06/where-are-the-anti-radiation-pills-meant-to-prevent-cancers-no-one-will-say.html>
 2. Edinburgh Evening News 20th June 2013 <http://www.scotsman.com/edinburgh-evening-news/latest-news/torness-nuclear-survival-manual-updated-1-2972065>
 3. Herald 25th May 2013 <http://www.heraldscotland.com/news/home-news/seaweed-posed-risk-to-reactor.21177198>



4. Scotsman 28th May 2013 <http://www.scotsman.com/news/environment/torness-nuclear-reactor-shut-amid-seaweed-threat-1-2945975>
5. Guardian 12th June 2013 <http://www.guardian.co.uk/world/2013/jun/12/nuclear-convoy-disaster-exercise-emergency>

8 Offshore Wind

Seagreen Wind Energy, a joint venture partnership between SSE Renewables and American firm Fluor, has lodged a planning application with Angus Council to build 12 miles of underground cabling to help carry electricity from what is planned to be Scotland's largest offshore wind farm in the Firth of Forth Offshore Wind Zone to the national grid.

The company applied to Marine Scotland in October 2012 for permission to build the first phase which is two wind farms of 75 turbines each, with a total capacity of 1050 megawatts (MW) (1.05GW). If permission is granted for the developments they would be located 16.7 miles and 23.6 miles off the Angus coast. (1) The Firth of Forth Zone of the UK's Round 3 offshore wind farm development programme has a potential installed capacity of 3.5GW. (2)

Round 3 wind farms – which include the Moray Firth (capacity 1.3GW) (3) and Firth of Forth – (4) will operate at depths never tried before and far from shore, using unproven giant turbines twice as tall as Big Ben. Manufacturers will only build the factories if they get enough turbine orders from wind farm developers. But one reason developers are reluctant to place orders is because these turbines have not been proved to withstand rough seas and strong winds. More special test sites such as the one in Aberdeenshire opposed by Donald Trump would help break this Catch-22. The Carbon Trust says Trump's opposition to a small offshore wind test site near his golf course could cost Britain dear in terms of building a renewable energy manufacturing base. (5) Energy Minister Fergus Ewing has announced a £15m fund to help develop prototype foundations for deep-water offshore wind turbines. (6)

Concrete for the foundations of another offshore wind turbine testing facility at Hunterston was slated to be poured at the beginning of July after a delay due to “variable ground conditions” found at one of three berths at the site. Mitsubishi plans to install its flagship 7MW SeaAngel and Siemens its 6MW SWT-6.0-154 machine at the SSE Hunterston Test Centre for Offshore Wind (HTCOW), which is due to open for business by October this year. (7)

Energy Minister Fergus Ewing has granted consent for a 7MW offshore demonstration wind turbine to be built at the Fife Energy Park in Methil. The development for Samsung Heavy Industries will test new designs and models for offshore wind turbines to increase the reliability and efficiency of the power they produce. (8) The demonstration turbine will include the world's longest wind turbine blades - 83 metres long - which are already their way by road and sea from Denmark to Fife. (9)

Methil is owned by Forth Ports which also has sites in Dundee and the Leith – ports which could also profit from wind power. (10) Dundee has launched the new Offshore Renewables Institute which



aims to commercialise and exploit expertise from seats of learning on Scotland's east coast in support of the region's burgeoning energy sector. (11)

Meanwhile the Neart na Gaoithe offshore wind farm, which is also in the Forth Estuary, but was part of the earlier Scottish Territorial Waters licensing Round rather than Round 3, has been granted planning permission by East Lothian Council to lay a cable to take electricity from Thorntonloch beach near Torness to a substation at the Crystal Rig onshore wind farm in the Lammermuir Hills. (12) Mainstream Renewable Power expects a decision later this year from Marine Scotland on planning permission for its 90 turbines, with a capacity of 450MW. (13)

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1. Herald 7th June 2013 <http://www.heraldscotland.com/news/home-news/wind-farm-energy-cable-plans-lodged.21279315>
 2. See <http://www.seagreenwindenergy.com/home.asp>
 3. See <http://www.morayoffshorerenewables.com/Home.aspx>
 4. See <http://www.thecrownstate.co.uk/energy-infrastructure/offshore-wind-energy/our-portfolio/project-details/round-3/>
 5. Times 17th June 2013
<http://www.thetimes.co.uk/tto/business/industries/naturalresources/article3792580.ece>
 6. BBC 25th April 2013 <http://www.bbc.co.uk/news/uk-scotland-scotland-business-22297640>
 7. Recharge News 26th June 2013 <http://www.rechargenews.com/wind/article1330872.ece>
 8. Scottish Government 7th May 2013 <http://www.scotland.gov.uk/News/Releases/2013/05/wind-sector-development>
 9. Fife Today 24th July 2013 <http://www.fifetoday.co.uk/news/local-headlines/samsung-blades-chart-path-from-denmark-to-fife-1-3010400>
 10. Bloomberg 2nd May 2013 <http://www.bloomberg.com/news/2013-05-01/britain-s-forgotten-ports-put-wind-in-goldman-s-sails-freight.html>
 11. Dundee Courier 22nd May 2013 <http://www.thecourier.co.uk/business/news/dundee-offshore-renewables-institute-launched-at-all-energy-conference-1.95461>
 12. Scotsman 19th June 2013 <http://www.scotsman.com/business/management/renewables-projects-forge-ahead-1-2970310>
 13. See <http://www.neartnagaoithe.com/>

9 Tidal Power

The world's best site for tidal power, the Pentland Firth, could provide half of Scotland's electricity, according to the first robust estimate of its potential. The tidal streams, which surge through the firth at five metres per second, could bring large amounts of renewable energy in reach within a decade if enough government support is available, said the Oxford University engineer behind the new study.



The engineers calculate that underwater turbines strung across the entire width of the firth could generate a maximum 1.9GW of energy, averaged across the fortnightly tidal cycle. That is equivalent to 16.5 terawatt hours (TWh) of electricity a year, almost half Scotland's entire annual electricity consumption in 2011. As Scotland already produces 14.6TWh a year of renewable energy, a fully exploited Pentland would bring Scotland close to its aim of 100% renewable electricity by 2020. (1)

The estimated tidal potential will be a disappointment to some though, according to some of the Press. (2) According to *The Guardian* the Scottish Government had previously estimated that tidal power capacity could be around 14GW giving the country a huge potential for electricity exports – but this number has since been removed from the Scottish Government website. A 2001 Garrad Hassan Report on Scotland's Renewable Resource suggested that Tidal Energy from all over Scotland – not just the Pentland Firth, might have a potential of 7.5GW and wave energy could have a potential of 14GW. (3) A document published in 2009, Scotland's First Marine Bill, repeated these numbers. It said adding Wave, Tidal and Offshore Wind together gives a marine energy potential of 46.5GW. (4)

Fergus Ewing says three leading tidal energy projects in Scottish waters have recently secured financial support from a European Commission fund and a UK government scheme. This will allow the Scottish Government to dedicate its £18m Marine Renewables Commercialisation Fund (MRCF), which was launched last year, to the wave energy industry. (5)

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1. Guardian 10th July 2013 <http://www.guardian.co.uk/environment/2013/jul/10/tidal-power-penland-firth-scotland-electricity>
 2. Independent 10th July 2013 <http://www.independent.co.uk/news/science/wave-goodbye-to-hope-of-tidal-energy-exports-scots-politicians-told-8698504.html>
 3. Scotland's Renewable Resource, 2001 Executive Summary, Garrad Hassan, <http://www.scotland.gov.uk/Resource/Doc/47176/0014633.pdf>
 4. Scotland's First Marine Bill 2009, <http://www.scotland.gov.uk/Resource/Doc/286295/0087185.pdf>
 5. BBC 22nd May 2013 <http://www.bbc.co.uk/news/uk-scotland-scotland-business-22611317>

10 Wave

The Scottish Government has given the green light for the world's largest wave power scheme, to be developed off the coast of the Western Isles. Edinburgh-based Aquamarine Power has received full consent from ministers to develop a 40MW wave farm off the north-west coast of Lewis – the world's largest ocean energy site.

Aquamarine, through its wholly owned subsidiary Lewis Wave Power, plans to begin installing its "Oyster" wave energy machines at the site within the next few years, once the necessary grid connections have been put in place. The aim is to ultimately deploy between 40 and 50 of the wave power devices along the coast at Lag na Greine, near Fivepenny Borve. However, energy giant SSE



announced last week that it would not be able to commission work on a Western Isles subsea electricity cable, costing more than £700 million, before 2017. (1)

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1. Scotsman 23rd May 2013 <http://www.scotsman.com/the-scotsman/environment/world-s-largest-wave-power-scheme-given-go-ahead-1-2939749> & <http://www.scotsman.com/news/analysis-marine-energy-hampered-by-costs-1-2940374>

11 Hydro

A £30m hydro power scheme in Ross-shire has been given planning approval. SSE will begin construction on the 7.5 megawatt (MW) Glasa scheme later this year. (1)

Meanwhile a backlog of applications for small-scale hydro schemes worth £23 million could be at risk if the UK government presses ahead with changes to its subsidy system, according to trade body Scottish Renewables. By the time these projects receive planning permission, they could be subject to a new tariff, which will be “considerably lower” than current levels due to the high level of applications this year. The industry wants the planned cuts – which could be as much as 20 per cent from April 2014 – to be delayed so that the high number projects caught up in the planning system does not disproportionately affect support for future schemes. (2)

A proposed community-run hydro-electric project in Edinburgh has managed to raised more than the £300,000 cost of building the scheme. Local residents of Balerno have been working on the bid for two years. Construction will begin within months and is estimated for completion in March 2014. The Balerno Village Trust – which established Harlaw Hydro – had intended to borrow much of the money from the banks, but said they were astonished at the level of interest from those who wanted to invest privately. (3)

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1. BBC 8th May 2013 <http://www.bbc.co.uk/news/uk-scotland-22439046>
 2. Scotsman 19th June 2013 <http://www.scotsman.com/business/management/subsidy-cut-puts-23m-of-hydro-schemes-at-risk-1-2970294>
 3. Scotland on Sunday 30th June 2013 <http://www.scotsman.com/news/environment/crowd-funding-fires-up-community-energy-plant-1-2983783>

12 Biomass

Consent has been granted to develop a £465m wood-fuelled heat and power plant at Grangemouth. Forth Energy said the 18-hectare site could be operating by 2017, burning wood mostly shipped from overseas. It is hoped the plant could create between 300 and 500 construction jobs and 70 posts based at the port, running the plant and handling the fuel. Energy Minister Fergus Ewing said:



"The construction of the combined heat and power plant at the Port of Grangemouth will create up to 500 jobs during construction and 70 permanent jobs, as well as generating up to 120MW of renewable electricity and 200MWth (megawatt thermal) of renewable heat for local business and industry." (1)

In Dundee councillors have decided not to support a similar biomass proposal triggering a public inquiry. In a debate lasting almost four hours, members decided by 20 votes to six to reject the recommendation by director of city development Mike Galloway that the council — a statutory consultee — should not object to Forth Energy's massive £325 million scheme. (2)

The Dundee plant is one of four originally planned by Forth Energy, which brings the harbour company, Forth Ports, together with the power company, Scottish and Southern Energy. A plant at Leith in Edinburgh was abandoned after protests, a plant at Rosyth in Fife is awaiting a decision by ministers. (3)

If the three remaining plants are built, they will be fuelled by importing a total of 1.7 million tonnes of wood chips and pellets every year from felling forests in North America and elsewhere. Forth Energy claims that this will cut climate pollution, but this is disputed by environmental groups.

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1. BBC 3rd June 2013 <http://www.bbc.co.uk/news/uk-scotland-tayside-central-22754897>
 2. Dundee Courier 25th June 2013 <http://www.thecourier.co.uk/news/local/dundee/dundee-city-council-rejects-biomass-proposal-1.106374>
 3. Rob Edwards 23rd June 2013 <http://www.robedwards.com/2013/06/pollution-from-planned-wood-burning-plant-will-be-like-two-million-cars.html>

13 Island Energy

Renewable energy projects could create more than 10,000 jobs on the Scottish islands by 2030, according to a report by energy consultants Baringa Partners and TNEI for the Government. Investment in wind, wave and tidal energy will bring significant socio-economic benefits to the Western Isles, Shetland and Orkney and could establish Scotland as a world leader in marine technologies. But the expense and difficulty of accessing the National Grid means the Government needs to weigh up the cost and benefits of developing renewable energy on the islands against other sources of electricity, the report said. (1)

Niall Stuart, chief executive of trade body Scottish Renewables, urged the government to address the problem of high-transmission charges. He argued that a cap on transmission charges or additional support for island generators would help bring down costs, while funds from the European Investment Bank could be used to help fund island grid infrastructure at a low rate of interest. (2)

Northern isles MP Alistair Carmichael said the findings vindicated local developers who had argued that the present system will not do. "*Having established that there is a case for island communities*



to be given a different charging system the next step now is to continue in our engagement with government to set up that system and to enable the development of renewable energy. This report also shows the potential for thousands of full-time jobs being created due to renewable developments. Locally, the economic implications could be huge". (3)

The report can be downloaded here: <https://www.gov.uk/government/publications/scottish-islands-renewable-project-final-report>

The Department of Energy and Climate Change has announced it is to consult, this summer, on the subsidy levels necessary to encourage investment in Island Energy. Highlands and Islands Enterprise called the move groundbreaking and "hugely welcome". The process will determine the "strike price" to ensure the producer has a minimum level of income. Responding to pressure from renewable energy developers in Orkney, Shetland and the Western Isles, the DECC statement said it intended *"to consult in the summer on additional support for renewables projects located on islands, where these have clearly distinct characteristics to typical mainland projects"*. It added: *"This is on a timetable to allow a differential strike price to be set for these projects in the final delivery plan in December."* (4)

Western Isles Council, which has hopes that renewable-energy schemes could reverse a steady population drift away from the islands, was aghast to discover that the cost of building an inter-connecting subsea cable had risen to more than £700 million. The high price meant that the cost of building the line could not be recovered from generators, stalling a 130 megawatt wind farm proposed by Lewis Wind Power, which was estimated as likely to bring 75 jobs to the islands. Orkney and Shetland faced similar barriers but now progress has again become possible with the acceptance by the UK Government that there should be a special islands pricing regime. (5)

Meanwhile Western Isles Council has moved to establish a specialist project team that will come up with a detailed business plan for the Outer Hebrides Energy Supply Company (OHESC). Following the Energy Act in 2010, which gave local authorities the power to generate and sell their own electricity, the council commissioned the local specialist firm Greenspace to look into the proposal. They found that the OHESC *"constitutes a very exciting prospect for the islands"*, which could be replicated across the Highlands and the islands. The favoured model suggested by Greenspace is a joint venture with an existing major player, such as SSE or EDF, which has a share in one of the major wind farms planned for Lewis. (6)

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1. STV 15th May 2013 <http://news.stv.tv/north/225389-10000-jobs-could-come-from-islands-renewable-energy-projects/>
 2. Business Green 15th May 2013 <http://www.businessgreen.com/bg/news/2268050/green-energy-from-scottish-islands-can-fuel-uk-if-costs-are-cut>
 3. Shetland News 14th May 2013 <http://www.shetnews.co.uk/news/6781-freeing-up-the-transmission-charging-logjam>
 4. BBC 27th June 2013 <http://www.bbc.co.uk/news/uk-scotland-scotland-business-23086710>
 5. Times 28th June 2013 <http://www.thetimes.co.uk/tto/business/industries/naturalresources/article3802534.ece>



6. Times 8th June 2013 <http://www.thetimes.co.uk/tto/news/uk/scotland/article3786212.ece>

14 Local & Community Energy

Scotland is ahead of schedule in meeting targets for community ownership of renewable energy projects, according to the Government. As of June 2012 more than 200MW of renewable generating capacity came from community and locally owned energy projects. This represents 40% of the 500MW target for 2020 set out in the Scottish Government's Routemap for Renewable Energy. Across the country, more than 5000 such projects now provide renewable heat and power both for local use and for the grid. (1)

On the other hand, Gregory Dix, of Savills Energy, is challenging claims by the Energy Saving Trust that Scotland is on track to achieve its community renewable target of having 500 megawatts of community and locally-owned renewable energy schemes in place by 2020. Mr Dix said the figures published by the trust relied too heavily on farms and estates, which accounted for 33 per cent of the total, with a further 31 per cent being accounted for under housing association developments and local business developments. Under the "real definition of community" the total capacity of renewable energy so far installed in Scotland was only 26MW. Mr Dix pointed out that 167 megawatts of future projects was accounted for by the controversial Viking Wind Farm development in Shetland, partly owned by the Shetland Charitable Trust. (2)

Community Energy Scotland has helped 1400 projects get up and running in eight years. The earliest ones like Ghigha and Westray are shining examples while £100,000 annual profit from the Shapinsay project has funded a local transport system and an out-of-hours ferry service. The beauty of all of this is that local people determine local priorities, having planned and built small local energy schemes to their own specifications and spent the proceeds according to their own priorities. (3)

Recent local energy projects include:

- A five-acre solar meadow with more than 2,500 solar panels at the Midlothian campus of Edinburgh College in Dalkeith. Designed and installed by SSE Energy Solutions at a cost of £1.2m it is expected to save the college tens of thousands of pounds on energy bills every year. (4)
- The people of Neilston in East Renfrewshire bought a 28% share in a £15.6m wind farm with partners Carbon Free Developments. Neilston Development Trust (NDT) raised £950,000 to buy their stake, loaned by the Scottish Government and other organisations. It will give Neilston about £10m of income over the life-time of the development. (5)
- Bristol beat Glasgow in the race for the European Union's 2015 European Green Capital award. Bristol impressed the Jury with its investment plans for transport and energy. Meanwhile Glasgow continues to look at ways to heat homes using water trapped in the abandoned mines underneath parts of the city where the coal came from that helped fuel the city's industrial development. It has been estimated that up to 40% of Glasgow's heat



could be generated in this way, which promises a dramatic fall in emissions compared to conventional power sources. (6)

- The Isle of Muck - home to 38 people has secured £978,840 from the Big Lottery Fund and contracted a renewable energy company, Wind & Sun to design and build a renewable electricity system. Using wind turbines from a British manufacturer, Evance Wind Turbines, alongside solar panels and a backup diesel generator, the system provides more than enough power for the islanders. (7)
- Every street light in Scotland could be fitted with low-energy LED bulbs as part of ambitious plans to cut carbon emissions. The Scottish government unveiled proposals for the green investment bank (GIB) to fund the Scotland-wide LED lighting programme as part of a £500m package of climate and green energy measures. Scottish government officials admitted they did not know how many street lights were involved, or the eventual CO₂ savings or the total cost of this programme, but the 40,000 street lights in Aberdeenshire alone are responsible for 8,750 tonnes of CO₂, with energy bills hitting £1.6m, and Fife council's street lights make up 10% of its total carbon footprint. (8)
- West Cumbria and North Lakes Friends of the Earth have launched a consultation on their new draft report – a Sustainable Energy Strategy for Cumbria. Comments from local authorities outside of Cumbria are welcome: See <http://www.no2nuclearpower.org.uk/news/comment/towards-a-sustainable-cumbria-discuss/>
- Glasgow City Council is planning to set up its own green energy company to tackle fuel poverty, cut carbon emissions and create new jobs. Last year the council spent almost £26 million heating buildings including schools, libraries, sport centres and museums and on powering street lights. Studies have now been carried out into harnessing hydro power from the rivers Clyde and Kelvin and generating power from waste at the Polmadie treatment plant. Experts have also investigated creating centralised heating networks similar to the hi-tech system used in the Commonwealth Games Athletes' Village. A number of green energy projects have been tested, including wind turbines on the Cathkin Braes and solar panels at St Benedict's primary in Easterhouse. Glasgow Energy Services Company (GLESCO) could be one of the largest such schemes in Europe. (9)

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1. STV 28th April 2013 <http://news.stv.tv/scotland/223146-scotland-ahead-of-schedule-on-community-owned-energy-targets/>
 2. Scotsman 22nd May 2013 <http://www.scotsman.com/news/environment/top-estate-agent-scots-struggling-on-green-energy-1-2938337>
 3. Herald 4th July 2013 <http://www.heraldscotland.com/comment/columnists/to-much-hot-air-opposing-community-energy-plans.21516074>
 4. Scotsman 25th April 2013 <http://www.scotsman.com/news/education/edinburgh-college-powered-by-new-solar-meadow-1-2908688>



5. Herald 13th May 2013 <http://www.heraldscotland.com/news/home-news/opening-of-community-wind-farm.21056615>
6. Herald 24th May 2013 <http://www.heraldscotland.com/comment/columnists/agenda-green-glasgow.21166874> & <http://ec.europa.eu/environment/europeangreencapital/winning-cities/2015-bristol/index.html>
7. Telegraph 6th June 2013 <http://www.telegraph.co.uk/journalists/alastair-good/10029757/Wind-brings-24hr-power-to-remote-Scottish-island.html>
8. Guardian 9th May 2013 <http://www.guardian.co.uk/environment/2013/may/09/street-lamps-scotland-low-energy-bulbs>
9. Evening Times 10th Aug 2013 <http://www.eveningtimes.co.uk/news/city-plans-to-give-green-power-to-glaswegians-132946n.21822785>

15 Unconventional Gas

Dart Energy, the company behind plans to drill for coal bed methane around Airth in central Scotland, said it expects ministers to take up to a year to rule on the controversial proposals. The unconventional gas specialist aims to drill 22 wells at 14 sites to bring its coal seam gas project at Airth to development. It appealed to the Scottish Government to rule on its application after its “non-determination” by Falkirk and Stirling councils, which said the plans raised environmental issues and public concerns to be addressed. (1)

Meanwhile Algy Cluff, who discovered one of the UK’s biggest oilfields in the 1970s, has been granted a licence to set fire to coal beneath Largo Bay and pipe the gas to shore. The picturesque bay is one of a number of UK locations where the entrepreneur has permission to drill, having been given licences for more than 76,000 acres of Britain’s seabed. (2)

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1. Herald 30th July 2013 <http://www.heraldscotland.com/business/company-news/dart-gets-ready-for-long-wait-on-plans.21731805>
 2. Dundee Courier 5th Aug 2013 <http://www.thecourier.co.uk/news/local/fife/concerns-over-fife-coal-firing-plans-1.117629> and Sun 5th Aug 2013 <http://www.thescottishsun.co.uk/scotsol/homepage/news/5053085/III-build-coal-fire-at-bottom-of-sea.html>