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This briefing does not necessarily 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/NuClearNewsNo82.pdf>

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<http://www.microgenscotland.org.uk/news/>

1 Hinkley Point C “descends into farce”

Plans for a new nuclear plant at Hinkley Point in Somerset have “descended into farce”, according to the SNP, after EDF delayed its decision on whether to proceed due to funding problems. The next Board Meeting is due to take place on 16th February, but it is not clear a decision will be taken then either. French news reports suggest the firm is struggling to generate funding to supply its 66.5% stake in the project, leading it to lobby the French government for additional capital. Although EDF chief executive Jean-Bernard Levy last week claimed the two new reactors would be built soon, the SNP has now called on the UK Government to rethink its plans.

SNP MSP Chic Brodie said: “The UK Government’s plans for a new nuclear power station have been a billion-pound white elephant from the start but these latest revelations show that they have descended into farce. Despite nuclear energy being less efficient and more costly than wind power, the UK Government continues to pursue this folly while slashing support for onshore wind. The decision to cut support for onshore wind could cost £3 billion in new investment and put more than 5,000 jobs at risk in Scotland. The Tory government’s ideological obsession with nuclear will be costly for taxpayers and businesses in Scotland – it’s about time they saw sense and rethink their energy policy which is not delivering for consumers or energy security.” (1)

EDF was expected to announce the go-ahead for the £18 billion Hinkley Point project after its Board Meeting on 27th January. But the French CFE-CGC energy union, which is represented on the Board, submitted a list of 15 questions it said have yet to be answered. The list includes an expression of serious concern about the plant's viability and what it might cost the company. The document reveals that the Infrastructure UK arm of the government has attached a BB+ credit rating to the project - below investment grade - reflecting worries in Whitehall that it might not be completed. The Union also asked what happens if the project is not built before 2025, as planned, and expressed concern that “significant” financial issues related to Hinkley could put the long term survival of the company in jeopardy. It asked: “What is the rationale for starting construction on two EPRs, at the

same site, in such a short period of time?" Given that the other projects appeared to be taking 10-15 years to build, it asked how EDF can estimate a construction time of nine years? Much of the concern in France about the project focuses on how EDF plans to pay for the reactor while continuing to pay its dividend.

A report in the French business newspaper Les Echos suggested that EDF's finance for Hinkley Point could come partly from selling a stake in EDF Energy which owns in eight other British nuclear plants including Torness and Hunterston B. (2)

The company, which has €37bn net debt, and has seen its share price fall from €29 in April 2014 to €11.87 now, has some huge investments to make in the coming decades, including an estimated €55bn to increase the life expectancy of its 58 nuclear plants in France. It is also taking a majority stake in Areva's €2.5bn reactor business. EDF has already announced plans to cut 5 per cent of its staff over the next three years. (3)

Sources close to the board suggest the concerns go beyond the unions meaning the firm may not have sufficient support to make a decision. The news comes amidst warnings from France's technical regulator that there could be further problems with EDF's Flamanville plant, which is built to the same design as that planned for the UK. Speaking to the French press, ASN chief Pierre-Frank Chevet warned the body was concerned by "anomalies" with the project which had not been spotted by EDF. The authority is conducting further tests on the crisis stricken plant which could cause further delays – with a decision expected later this year. (4)

According to *The Times* the EDF Board remains deeply split over whether to proceed with Hinkley, with nearly half its members expected to vote against. Mycle Schneider, a Paris-based nuclear energy expert, said that the situation was very serious, adding: "*The indications are that the unions, who have six board seats, would have voted against it and at least one more member. Maybe more.*" Although the executive team of EDF, including Jean-Bernard Lévy, the chairman, is strongly backing the project with government approval, they are facing stiff opposition from other powerful industry figures. Upheaval within the French nuclear industry is complicating efforts to finalise the Hinkley project. (5)

Meanwhile, the Stop Hinkley Campaign has released a new briefing on the huge impact the Somerset reactors would have on the UK's radioactive waste stockpile. The proposed nuclear power station would produce radioactive wastes and spent fuel with a radioactivity inventory equal to roughly 80% of the radioactivity in all of the UK's existing radioactive wastes put together. The group said Ministers are misleading the public on how much nuclear waste Hinkley will create by measuring it in terms of volume - not a useful indication of the impact it will have on UK waste management. (6)

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1. Holyrood 27th Jan 2016 <https://www.holyrood.com/articles/news/uk-governments-hinkley-point-nuclear-plans-have-descended-farce-says-snp>
 2. FT 26th Jan 2016 <http://www.ft.com/cms/s/0/91a36290-c35a-11e5-808f-8231cd71622e.html>

3. Times 27th Jan 2016
http://www.thetimes.co.uk/tto/business/industries/industrials/article4675395.ece?CMP=OTH-gnws-standard-2016_01_27
4. Greenpeace 26th Jan 2016 <http://energydesk.greenpeace.org/2016/01/26/hardly-anybody-in-france-wants-edf-to-build-hinkley/>
5. Times 1st Feb 2016
<http://www.thetimes.co.uk/tto/business/industries/naturalresources/article4679035.ece>
6. Stop Hinkley Briefing 25th Jan 2016
<http://www.stophinkley.org/PressReleases/ImpactNewReactorProgrammeUK.pdf>

2 NDA Strategy & Business Plan

The Nuclear Decommissioning Authority (NDA) has published its draft Strategy and Business Plan for 2016-2019 for formal consultation. The consultation period for both documents will end on 15 February. The Strategy, published every five years, looks at the NDA's long-term mission through a number of themes while the Business Plan, which is published annually, takes a more focused look at the next three years of activity across its estate, together with the associated funding.

It also published, on 5th January 2016 a response (1) to comments made on an early version of draft Strategy III which was published in September. (2)

The NFLA responded to the NDA's early version of the draft Strategy saying that:

"A worrying picture is beginning to emerge in the Draft Strategy Document of an evolving strategy for the NDA which is straying even further from environmental principles. We have already seen increasing quantities of radioactive waste diluted and dispersed around the environment by diverting it to landfill, discharging it into our estuaries, seas and atmosphere using dissolution plants, metal recycling plants and incinerators – masquerading as the environmentally-friendly sounding 'waste hierarchy'. Now the NDA is proposing to step up a gear the use of these techniques by switching some intermediate-level waste to near surface dumps, rather than a Geological Disposal Facility, and vastly increasing the amount of waste being treated using various dilute and disperse methodologies by bringing forward the dismantling of decommissioned Magnox reactors." (3)

Unfortunately the NDA's response to the early consultation concludes that *"Having considered the engagement feedback to the draft Strategy the NDA has concluded that the overall direction of travel for the draft Strategy is correct."*

Interestingly the NDA says that in response to feedback on the Plutonium strategy it has revised the Strategy Development section of the strategy to provide further clarity on work on the re-use and immobilisation options.

The Draft Strategy reminds us that the NDA has taken the decision to consolidate the plutonium stocks currently held at Dounreay at Sellafield. The NDA continues to work with technology suppliers, developers and UK government to establish how the re-use option could be secured and

implemented. Additionally it continues to fund technology development for the immobilisation of plutonium.

Business Plan 2016-19

Chapelcross will continue with decommissioning and demolition activities in preparation for entry into interim Care and Maintenance, which is expected to begin in 2028. In 2017 the retrieval of Intermediate Level Waste (ILW) is expected to start as is construction of an ILW store.

Hunterston A is expected to enter interim care and maintenance earlier in 2022-3. Over this period the solid ILW encapsulation plant construction is expected to be completed and ILW retrievals, processing and storage activities will continue.

Magnox spending will fall from £602m in 2015/6 to £550m in 2016/7

Dounreay: This period should see completion of the immobilisation of the radioactive liquids produced from reprocessing Fast Reactor spent fuel. Preparation works to start retrieving waste from the silo and silo should be complete and the solid waste treatment and packaging plant should become operational. All fuels should be removed from the Dounreay Fast Reactor during this period.

Dounreay's budget will fall from £209m in 2015/6 to £177m in 2016/7.

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1. NDA Response to Stakeholder Feedback, January 2016 <http://www.nda.gov.uk/publication/nda-draft-strategy-published-september-2015-nda-response-to-stakeholder-feedback/>
 2. NDA Draft Strategy, September 2015 <http://www.nda.gov.uk/publication/draft-strategy-early-version>
 3. NFLA Briefing November 2015
http://nuclearpolicy.info/docs/radwaste/Rad_Waste_Brfg_59_NDA_Draft_Strategy.pdf

3 Dounreay

PFR Fuel Transports

The first batch of unused fuel from Dounreay's Prototype Fast Reactor (PFR) in Caithness has been transported to Sellafield in Cumbria. The batch of fuel manufactured for the Prototype Fast Reactor (PFR), which was shut in 1994, arrived safely amid high security at the beginning of December. The cargo, which was never used, is the latest fuel to be moved from Dounreay, but Dounreay Site Restoration Ltd (DSRL) would not disclose how the fuel was transported to Sellafield for "security reasons". The fuel is a mixture of plutonium and uranium oxides. Nuclear engineer John Large condemned these transports. He said: "*We're talking about bomb-grade material that would be a target for terrorists.*"

The removal of the first PFR fuel from Dounreay follows the completion earlier in 2015 of the first phase of transports of breeder material from the Dounreay Fast Reactor to Sellafield.

Each fuel movement requires a great deal of preparation and co-ordination across the industry, regulators, government and police.

The PFR fuel is the first consignment of so-called exotic fuels that are being transferred to Sellafield as part of the work to shut down the Dounreay site. The programme to transfer the exotic material to Sellafield is expected to take a number of years to complete. It will be consolidated with similar material in safe and secure storage at Sellafield until Government decides on a long term disposition route. As well as unirradiated highly-enriched uranium and unirradiated plutonium the exotic fuels include irradiated fuels. Altogether transporting the exotic material to Sellafield is expected to take another 50 or 60 journeys over six years. (1)

Concerns were raised about the movement of these materials by rail at a time of major flooding in Cumbria. CORE condemned the decision to go ahead with the movement of the fuel after extensive flooding across Scotland and particularly in the north-west of England. The campaigners said the train journeys had the potential to compromise public safety.

Martin Forwood said: *"It beggars belief that the decision to risk the plutonium fuel transport was taken despite the widely-trailed storm evidence and rail warnings. We condemn the perverse decision as being dangerously irresponsible and as a blatant breach of the stringent safety and security rules required for such transports. Those responsible have shown a level of incompetence that verges on criminal and should be weeded out, so that public and rail safety is not similarly endangered again"*. (2)

The Nuclear Free Local Authorities (NFLA) wrote to Dounreay Site Restoration Ltd (DSRL) and the Nuclear Decommissioning Authority (NDA) to express its alarm that a transport of radioactive materials from Dounreay to Sellafield took place during intense inclement weather created by 'Storm Desmond'. (3)

Dounreay Site Restoration (DSRL) said in December that it has sent 11 tonnes of "breeder" material to Sellafield's Magnox reprocessing facility over the last year, representing about a quarter of the material stored on site. This too would contain bomb-grade plutonium because during the operation of a fast reactor a "blanket" of otherwise useless Uranium-238 around the reactor core is converted into plutonium. The 11 tonnes was delivered in 32 shipments, although the company does not reveal the method of transportation for "security" reasons. The remaining 44 tonnes of breeder material represent approximately 40% of the total inventory of nuclear materials on the site. (4)

PFR Decommissioning

Dounreay has begun a crucial phase in decommissioning the site's main reactor. The Prototype Fast Reactor (PFR) was shut down in 1994 after 20 years in operation. Remotely-operated robotic tools have been specially designed for dismantling the reactor. Graeme Dunnett, senior project manager of the PFR clean-up, told BBC Scotland: "Since it was operational no-one has been in that area for over 40 years so everything is having to be done remotely. We have gone back to the drawings and operating aspects of how it was put together. We are also fortunate enough to have senior members of the team who were present when it was operational and we have been able to use their experience to design and manufacture tools to take the reactor apart." (5)

1. BBC 7th Dec 2015 <http://www.bbc.co.uk/news/uk-scotland-highlands-islands-35030447> Press & Journal 8th Dec 2015 <https://www.pressandjournal.co.uk/fp/news/highlands/773536/undefined-headline-1402/> World Nuclear News 8th Dec 2015 <http://www.world-nuclear-news.org/WR-Fast-reactor-fuel-arrives-at-Sellafield-0812154.html> Sellafield Ltd 9th Dec 2015 <http://www.sellafieldsites.com/2015/12/dounreay-fuel-arrives-safely-at-sellafield/>
2. Press and Journal 14th Dec 2015 <https://www.pressandjournal.co.uk/fp/news/highlands/778884/concerns-raised-by-campaigners-over-moving-dounreay-material-by-rail-after-flooding/> and CORE Press Release 12th December 2015 <http://www.corecumbria.co.uk/newsapp/pressreleases/pressmain.asp?StrNewsID=363>
3. NFLA 14th Dec 2015 http://www.nuclearpolicy.info/docs/news/NFLA_Dounreay_transport_concerns.pdf
4. Energy Voice 29th Dec 2015 <https://www.energyvoice.com/otherenergy/96932/radioactive-uranium-sent-to-sellafield-to-reprocess/>
5. BBC 22nd Jan 2016 <http://www.bbc.co.uk/news/uk-scotland-highlands-islands-35376762>

4 Sellafield's Radioactive Discharges

A wide range of radionuclides are discharged from the Sellafield site in Cumbria including radiocarbon (^{14}C) which is disposed of in various forms including highly soluble inorganic carbon within the low level liquid radioactive effluent, via pipelines into the Irish Sea. This ^{14}C is rapidly incorporated into the shells of marine organisms like molluscs. A new study investigated a number of sites located in Irish Sea and West of Scotland intertidal zones, and found higher than expected levels in shell material at least as far as Port Appin, 265 km north of Sellafield.

Of the commonly found species - blue mussel (*Mytilus edulis*), common cockle (*Cerastoderma edule*) and common periwinkle (*Littorina littorea*), mussels were found to be the most highly enriched in ^{14}C due to the surface environment they inhabit and their feeding behaviour.

The findings are a "wake-up call" for anyone who thinks pollution from Sellafield is yesterday's problem, say campaigners. Sellafield, however, stresses that the contamination is well below safety limits. The study was carried out by a team of scientists from the Scottish Universities Environmental Research Centre in East Kilbride and The Scottish Association for Marine Science in Oban. (1&2)

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1. Journal of Environmental Radioactivity January 2016 (accessed) 16th Dec 2015 <http://www.sciencedirect.com/science/article/pii/S0265931X15301454>
 2. Sun Herald 20th Dec 2015 http://www.heraldscotland.com/news/14157272.Scottish_shellfish_are_contaminated_by_radioactive_waste_from_Sellafield/



5 Nuclear Material to be transported to America

Angus Robertson, the SNP leader at Westminster, has raised concerns over reports that nuclear material from Dounreay is to be transported to Wick Airport, and then flown to America. The issue was raised during Prime Minister's Questions in the Commons by Robertson, who told MPs: *"There are growing reports in the north of Scotland about plans to transport dangerous nuclear material, including potentially nuclear weapons grade uranium, from the Dounreay nuclear facility on public roads to Wick airport. It's believed that it will then be flown to the United States."* Mr Robertson asked George Osborne - who was standing in at the dispatch box for David Cameron what the nuclear material would be used for. (1)

Mr Osborne responded: *"The transportation of nuclear materials has happened across this country over many decades. There are established procedures for doing so. The Royal Marines and the police service in Scotland provide the security as they do that."* (2)

The secret plan to ship the weapons-grade uranium to the US was condemned as an *"open invitation to terrorists"* by Martin Forwood of Cumbrians Opposed to a Radioactive Environment. The five kilograms of enriched uranium will be sent by sea to the US government's nuclear complex at Savannah River in South Carolina, according to the *Sunday Herald*. The uranium is contained in five research reactor fuel assemblies that were airlifted in emergency out of the former Soviet republic of Georgia in 1998 to prevent them being stolen and made into nuclear bombs. The fuel was taken to Dounreay, where it has remained ever since. But earlier this year the US Nuclear Regulatory Commission (NRC) issued a US nuclear transport company authorisation for a *"one-time shipment"* of the fuel before the end of 2016. *"This shipment is in the interest of US national security,"* said the NRC safety evaluation report.

This is the fuel that was taken from a reactor at a physics research institute in Mtskheta, 15 kilometres from the Georgian capital, Tbilisi, in a secretive US operation in April 1998. The US government was worried at the time that it could have fallen into the hands of Chechen gangs or Iran. Martin Forwood said *"plans to remove this weapons-grade highly enriched uranium fuel from safety and ship it 4,000 miles across the Atlantic sends an open invitation to terrorists keen to get their hands on this prime terrorist material,"* he said. *"Common sense dictates that such dangerous material should remain in the UK and not be deliberately and unnecessarily exposed to the significant safety and security risks encountered at sea and the hostile forces that the world faces today."*

Tom Clements, director of Savannah River Site Watch, an environmental group in Columbia, South Carolina said: *"as the UK is a nuclear weapons state holding large stocks of weapon-usable materials, it serves no nuclear non-proliferation purpose to ship this material to the Savannah River Site,"* he said. *"The additional land transport and the sea transport pose environmental and security risks that can easily be avoided by leaving the material in the UK."* (3)

These plans to ship weapons-grade uranium to the US are not to be confused with plans to ship plutonium – most of which originated in the UK – from Japan to Savannah River using two ships based in Barrow which have also been condemned. Martin Forwood said: *"The practice of shipping*

this plutonium to the US as a safeguard is completely undermined by deliberately exposing this prime terrorist material to a lengthy sea transport during which it will face the everyday maritime risks and the targeting by those with hostile intentions. Whilst the Barrow ships may have been empty when they left the port [on 19th Jan], we condemn their use for such a shipment which we see as being wholly unnecessary and a significant security threat in today's volatile and unpredictable world". (4)

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1. Herald 9th Dec 2015
http://www.heraldscotland.com/news/14134866.UK_ministers_to_look_into_concerns_about_nuclear_material_being_transportd_across_Scotland/
 2. BBC 9th Dec 2015 <http://www.bbc.co.uk/news/uk-scotland-scotland-politics-35051424>
 3. Sun Herald 20th Dec 2015
http://www.heraldscotland.com/news/14157268.UK_Government_urged_to_come_clean_about_secret_plan_to_ship_weapons_grade_uranium_to_US/ and The Ferret 21st Dec 2015
<https://thoferret.scot/dangerous-plan-to-ship-bombs-grade-uranium-from-dounreay-to-the-us/>
 4. CORE Press Release 19th Jan 2016
<http://www.corecumbria.co.uk/newsapp/pressreleases/pressmain.asp?StrNewsID=365>

6 Rosyth

The nuclear safety regime at the Rosyth naval dockyard in Fife has been called into question after an emergency exercise failed to demonstrate adequate arrangements for rescuing casualties from an accident. The Office for Nuclear Regulation (ONR) has ordered Babcock, the multinational company that runs the dockyard for the Royal Navy, to rerun the exercise, codenamed Nightstar, in March because of mistakes made last September.

An inspection by the Office for Nuclear Regulation (ONR) concluded that there were flaws in the way that staff looked after injured people during the exercise. There were also communication and command problems in dealing with the imagined accident. The revelation has prompted "unease" about safety at the naval base, according to the local MP. Anti-nuclear campaigners have highlighted the serious risks of accidents, and demanded higher standards. (1)

Rosyth naval dockyard is home to seven defunct nuclear submarines. The MoD plans to dismantle these at Rosyth, and then to transport the resulting 3,600 tonnes of radioactive waste to a disposal site yet to be chosen. One option is the Chapelcross site near Annan in Dumfries and Galloway. But this is opposed by the Scottish Government. A dock is being equipped to remove radioactive waste from the first "demonstrator" submarine, HMS Swiftsure. The aim is to start dismantling the boat in May. (2)

An update on the progress of the Submarine Dismantling Project (SDP) was given to the December meeting of Rosyth Community Council by Fife Council's Protective Services senior manager, Roy Stewart. In a presentation to the community council, Mr Stewart said that the key elements of the programme were beginning to take shape, including the de-licensing of dock number three area, which remains "on target with the Office for Nuclear Regulation (ONR) to conclude in December



2015". He also outlined that work to equip dock number two with the infrastructure required to enable the Low Level Waste (LLW) to be removed from the demonstrator submarine (Swiftsure) is "progressing to programme", which means the submarine docking cradle, portal crane, security fence at dock number two and a replacement dock gate have been completed. Another meeting of the Rosyth Local Liaison Committee is scheduled for April 27, where there will be an opportunity for members to visit the Active Waste Accumulation Facility (AWAF), where LLW is currently stored until a disposal route is confirmed.

The problems with the Nightstar exercise on 30 September 2015 were disclosed in the ONR's latest three-monthly report on Rosyth, posted online. Though inspectors thought that some of the exercise procedures were adequate, others were not. *"The capability in relation to casualty recovery, communications and command and control at the incident scene was not considered by the attending ONR inspectors to be fully demonstrated,"* the report said. *"Site will undertake a partial re-demonstration of the emergency arrangements in the areas of casualty recovery and procedures and protocols at the incident scene."*

Peter Burt from the Nuclear Information Service thought it was "troubling" that Babcock had failed to deliver a high standard of emergency response to an accident. *"It's a particular concern that Babcock's emergency arrangements were not able to demonstrate that casualties could be safely recovered from the scene,"* he said.

Looking after the defunct submarines at Rosyth to ensure that radioactivity doesn't leak and contaminate the environment has cost the MoD £13.5 million over the last five years. (4)

As another defence nuclear emergency planning exercise raises concerns with the nuclear regulator, NFLA has called for an urgent review of defence site safety and emergency arrangements. The news from Rosyth is part of a growing body of evidence which suggests more systemic concerns around defence site nuclear safety may require attention. NFLA calls for a joint review to be held on nuclear emergency planning arrangements by the Defence Nuclear Safety Regulator and the Office for Nuclear Regulation (ONR) to allay public concern and to seek significant improvements. (5)

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1. The Ferret 14th Jan 2016 <https://theferret.scot/nuclear-safety-rosyth-dockyards/>
 2. Sun Herald 10th Jan 2016
http://www.heraldscotland.com/news/14194001.Questions_raised_over_safety_regime_at_Scotland_s_nuclear_submarine_graveyard/
 3. Dunfermline Press 29th Dec 2015
http://www.dunfermlinepress.com/news/14171171._Good_progress__being_made_on_dismantling_nuclear_submarines_in_Rosyth/
 4. BBC 3rd June 2015 <http://www.bbc.co.uk/news/uk-england-devon-32086030>
 5. NFLA 18th Jan 2016 <http://www.nuclearpolicy.info/news/as-another-defence-nuclear-emergency-planning-exercise-raises-concerns-with-the-nuclear-regulator-nfla-calls-for-an-urgent-review-of-defence-site-safety-and-emergency-arrangements/>



7 Torness and Hunterston

Another unscheduled shutdown

There was another unscheduled shutdown at Torness in December. Reactor 2 stopped automatically during routine testing when an issue with an electrical system was detected. (1) And this was after an extensive programme of work carried out over the summer at a cost of £30m. WWF Scotland director Lang Banks said: *"With this unplanned shutdown at Torness coming so soon after news of cracking in the bricks surrounding the reactor at Hunterston, nuclear power is once again revealing itself to be a creaking and increasingly unreliable source of energy. It underlines why Scotland is right to be choosing to harness more power from renewable energy sources."* (2)

Demand Management

On 16th December a third of Britain's reactors were offline – three because of *"unrelated electrical issues"*, and two due to planned maintenance. Worrying to lose five reactors at the same time, but luckily the weather was mild. (3) Edinburgh-based demand response provider Flexitricity was called upon to secure power supply by National Grid. Flexitricity *"...responded by quickly lowering consumption at commercial sites like cold stores and by turning up highly efficient combined heat and power generators across our connected network."* (4)

Life Extensions

With the UK's Office for Nuclear Regulation facing a leadership crisis and a mounting workload linked to China's plans to invest £8 billion in the British industry, concern has been expressed that the ONR doesn't have the staff and expertise it needs to deal with ageing reactors as well as a huge expansion. (5)

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1. BBC 14th Dec 2015 <http://www.bbc.co.uk/news/uk-scotland-edinburgh-east-fife-35094032>
 2. STV 14th Dec 2015 <http://news.stv.tv/east-central/1335988-unplanned-shutdown-of-reactor-at-torness-nuclear-power-plant/>
 3. Times 17th Dec 2015 <http://www.thetimes.co.uk/tto/business/industries/utilities/article4643340.ece>
 4. Energy Live News 15th Dec 2015 <http://www.energylivenews.com/2015/12/15/unplanned-shutdown-of-edfs-nuclear-reactor/>
 5. Times 12th Jan 2016 <http://www.thetimes.co.uk/tto/business/industries/utilities/article4662825.ece>

8 Scottish Government efforts to tackle climate change

Analysis by WWF Scotland of official figures shows that the Scottish Government is planning to reduce the amount of money it spends on policies that help to tackle climate change by almost 10%.



It follows a commitment from the Scottish Government, first made last summer and repeated in the run up to the international Paris climate change conference, that climate change would be embedded throughout its Draft Budget. Previous analysis by the Existing Homes Alliance has already shown that the Scottish Government is planning to reduce future funding for fuel poverty and energy efficiency by 13%. This is despite a commitment made last year to make energy efficiency a National Infrastructure Priority. With almost half of Scotland's climate change emissions coming from heating our homes and businesses, improving energy efficiency is the essential foundation to tackling climate change, cutting fuel poverty and reducing fuel bills. (1) (2)

£15m less for fuel poverty

Just before Deputy First Minister John Swinney MSP gave evidence to the Economy, Energy and Tourism (EET) Committee of the Scottish Parliament on the Draft Budget 2016-17, the Existing Homes Alliance called on the Scottish Government to reverse its decision to cut the fuel poverty/energy efficiency budget.

Alan Ferguson, Chair of the Existing Homes Alliance Scotland said:

"It is clear from the Draft Budget that the Scottish Government currently plans to spend over £15m less on tackling fuel poverty and improving energy efficiency next year, compared to what they are spending during the current financial year. That is particularly disappointing as it follows a new commitment from the Scottish Government to take a longer-term, 'transformational' approach to improving the energy efficiency of Scotland's homes, through making energy efficiency a National Infrastructure Priority."

"With Scotland's high rate of fuel poverty currently showing little sign of improving, we are calling on all of Scotland's political parties to set out a plan in their manifestos for abolishing cold homes in Scotland, through national infrastructure and fuel poverty programmes that support all homes to reach at least a C energy performance standard by 2025. No other investment can do so much, particularly in a tight budget situation, to cut energy bills for the fuel poor, create 8-9,000 jobs all over Scotland, reduce climate emissions and improve physical and mental health." (3)

Although the Scottish Government has declared warm homes to be a national infrastructure priority to tackle both fuel poverty and meet greenhouse gas commitments, the Scottish Government has not brought forward new concrete proposals and clear goals to make this happen. (4) This should involve upgrading the insulation and energy-efficiency ratings of 127,000 homes a year for 10 years. (5) A consultation on minimum energy efficiency standards in private homes has been postponed until after the May elections. (6)

Figures show that almost 35% of households were classed as living in fuel poverty in 2014, compared with revised estimates of 35.8% in 2013. About 9.5% were living in extreme fuel poverty in 2014 compared with 9.8% in 2013. So there has been very little progress. It is highly unlikely the Government's target to eradicate fuel poverty in Scotland, as far as is reasonably practicable, by November 2016 will now be met. (7)



Stop Climate Chaos Manifesto

The Stop Climate Chaos Scotland coalition has set out what it thinks the key priorities should be for the next Scottish Government. These include committing to and delivering a Warm Homes Act. (8) Over 50 per cent of our carbon emissions and energy use comes from heating our buildings and water yet we're still only delivering around 4 per cent of that heat from renewables. A Warm Homes Act would establish a regulatory framework designed to support market growth in renewable and low-carbon heat and increase investor and consumer confidence. (9) Research by Ricardo AEA for WWF, Friends of the Earth Scotland and RSPB indicates that Scotland will have to deliver 40% renewable heat by 2030, in addition to significant efficiency improvements, to fulfil targets under the Scottish Climate Change Act. A step change in approach is clearly required. (10)

A major part of the shift to renewable heat would involve introducing district heating networks. Research by Scottish Enterprise shows there are currently 9,886 properties connected to district heating schemes. The Scottish Government has a target to connect 40,000 homes by 2020. This is a major opportunity for Scottish businesses and investors. (11)

Sarah Boyack MSP, Labour's spokesperson on Environmental Justice in the Scottish Parliament committed the Party to supporting a Warm Homes Bill in the next Parliament in her speech to the Stop Climate Chaos rally in Edinburgh in November, and Scottish Labour Leader Kezia Dugdale promised that if Labour win in May's election she will bring in a "ground-breaking" Scottish Warm Homes Act. The legislation, she said, will "deliver the changes we need to see in planning and building regulations to tackle fuel poverty". (12)

Meanwhile, the Scottish Government has launched a consultation on plans to support the roll-out of district and communal heating services across Scotland. It wants views on proposed regulations which simplify how district and communal heating systems are installed in the common parts of tenements. The regulations make installation of heating infrastructure easier for the owner of a flat by creating a procedure which allows for any neighbours who wish to object an opportunity to outline their objections. The proposed regulations are aimed at property owners installing district and communal heating services in their properties when some of the infrastructure (e.g. pipes) needs to run through the communal areas. (13)

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9 Renewable Targets

Scotland should set an ambitious new target of generating the equivalent of 50% of its total electricity, heat and transport demand from renewables by 2030, according to industry body Scottish Renewables. This would require a threefold increase in green energy generation, but Scotland is on track to be more than halfway there by 2020.

Scottish Renewables is calling for the new target as part of its manifesto, *Renewed Ambitions: Defining the Future of Renewable Energy in Scotland*, launched ahead of May's Scottish Parliament election. The document sets out how the organisation believes Scotland's next Government can best support the continued growth of the sector and the economic and environment benefits it is already delivering.

Currently renewables produce the equivalent of 15% of Scotland's energy use (not just electricity, but also heat and transport.) The current target is for Scotland to produce the equivalent of 100% of electricity consumption from renewables by 2020. Unfortunately it is becoming increasingly clear that this target will be missed largely because of changes to the system of support for renewables by the Tory Government. Nevertheless few people would deny that the 100% target has provided a hugely powerful focus for government and industry and helped create the green energy industry we have today; one that provides half of our electricity and supports 21,000 jobs. (2)

The Scottish Renewables manifesto also calls on the next Scottish Government to expand community and local ownership of renewable energy projects through the creation of a Scottish Renewable Energy Bond which would allow savers across Scotland to invest in the growth of the renewables industry while also generating a return on their investment. Anne Schiffer, energy campaigner at

Friends of the Earth Scotland, said: "*We also need to make sure that communities don't miss out. Therefore we are calling on the Scottish Government to increase the current 500MW target of community and locally owned energy by 2020 to 1GW and also set an ambitious target of 2GW by 2030.*" (3)

The Manifesto (4) also calls for the public sector to act as an exemplar and spearhead the growth of renewable energy through a target for renewable energy use in heat, power and transport for public bodies, and the use procurement policies to increase the market for renewable heat, power and transport, placing. Local authorities should be empowered to produce masterplans for renewable and low-carbon energy opportunities.

The heat sector should be transformed by accelerating the uptake of renewable and low carbon heat, for instance by using new powers over the Energy Company Obligation to accelerate the growth of district heating and introducing more progressive planning policies. Similar to those set out in the London Plan, which require development proposals to evaluate the feasibility of combined heat and power. An appropriate regulatory and incentive framework needs to be developed for district heating which will protect developers and consumers and educate consumers about the benefits of joining such schemes.

In the UK, the introduction of an auction for long-term contracts for clean power has delivered significant reductions in the price of renewable electricity, with onshore wind and solar now significantly cheaper than nuclear power. But the UK Government has cut support for onshore wind and solar PV. The manifesto asks the Scottish Government to make the case for maintaining access to auctions for Contracts for Difference (CfD) for all technologies, with the potential for 'subsidy-free' contracts for onshore wind and solar PV. It also recommends that the Scottish Government support DECC in obtaining State Aid clearance for the Remote Islands Contract for Difference and push for its inclusion in the upcoming allocation round.

Scottish Renewable Sector in Disarray

Niall Stuart of Scottish Renewables told the Scottish Parliament's Economy, Energy and Tourism Committee on 9th December 2015 that the Scottish renewables energy sector is '*in the dark and in disarray*', as a result of recent changes in UK Government. He said: "*The various cuts, delays and removals of support schemes for the renewable energy industry has, in many ways, left the sector in disarray.*" (5)

Years of planning and hundreds of millions of pounds of investment have so far been poured into the development of three proposed Scottish offshore wind farms. But this is at risk because of continuing delays in securing vital government subsidies. Only two of the windfarms - the 664MW Beatrice project and the 448MW Neart Na Gaoithe project - have so far been successful in bidding for valuable government subsidies, which make projects commercially viable by guaranteeing the price at which electricity is sold for a 15-year period. In the last Contracts for Difference (CfD) bidding auction held in 2014 the three other windfarms (Seagreen, Inch Cape and Moray Offshore) were unsuccessful and, since the Conservatives returned to power last May, no further auctions have been held. £90 million has so far been spent by Portuguese developer EDP Renewables on the 1116MW Moray Offshore project but at least one potential investor has withdrawn because of the extended funding uncertainty. Since failing to obtain a subsidy contract in 2014, the company has had to maintain an Edinburgh office employing 40 people "who are doing pretty much zero at the moment ". (6)

John Forster of the recently formed Solar Trade Association Scotland said solar technology in particular is under-deployed in Scotland. We are heading rapidly towards 9GW of solar in the UK, and it would therefore be logical to think that we should be approaching 900MW of solar in Scotland. We will be lucky if we are getting past 200MW by the end of 2015, so we are a long way off the mark. He said wind and solar power can work well together to tackle intermittency, but if we have more than 5GW of wind, by rights we should have around 2.5GW of solar by now if we are to achieve some sort of balance. With that combined with storage, we would be producing something akin to base-load. He said solar should be able to operate without subsidies by about 2019-20.

Westminster Moves

The Scottish Affairs Committee of MPs in the House of Commons has announced an inquiry into the future of renewable energy in Scotland in the face of expected UK Government plans to reduce levels of taxpayer support for the sector. Much – if not most – of the UK’s renewable energy sector is based in Scotland and is an important part of the economy. The Committee will examine the potential impact of changes to levels of public subsidy available to the renewable energy sector in Scotland. They will also be looking at what the Scottish and UK governments have done to ensure that the aspirations of the sector are taken fully into account in the development of UK energy policy. (7)

Efficiency Targets

Official statistics published by the Scottish Government show that after eight consecutive years of falling electricity demand in Scotland is on the rise again. A report, Energy in Scotland 2016, shows overall energy demand has fallen in Scotland by 14.1 per cent over the last decade, exceeding the Scottish Government’s target to reduce demand by 12 per cent by 2020 well ahead of schedule. However Scotland has the highest electricity use per household of any region in the UK, and demand increased by almost 4% over the past year. (8)

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10 Renewable Notes

Tidal Power

Plans have been drawn up for a new £12bn tidal power project spanning Cumbria and south-west Scotland. Energy company North West Energy Squared is exploring the possibility of developing the 67-mile Solway Tidal Project between Workington in Cumbria and Stranraer. The company claims that the tidal barrage would create more than 12MWh a year of energy per year, enough to power 2.5m homes. It would also involve the construction of a 67-mile road, running along the top of the barrage, which would cut the journey time between Scotland and Cumbria by 70 miles. The Solway Tidal Lagoon Project is the biggest of six tidal projects across the North-west of England that have been proposed by the company. (1)

Meanwhile, Atlantis Resources Ltd says its flagship MeyGen tidal power project in the Pentland Firth will meet the target to start supplying power to the grid in 2016. Tim Cornelius, chief executive of the Singapore-based tidal power company, said the project was on track to execute its final offshore installation and commissioning programme for Phase 1A in 2016. (2)

With 398 megawatts of total installed capacity when fully constructed, the MeyGen array will consist of 269 submerged tidal turbines. Fergus Ewing visited the site to witness first-hand the onshore and offshore construction works taking place, and spoke to infrastructure team on the ground about the engineering aspects of this visionary marine project. (3)

Floating turbines

Siemens has been contracted to supply 30 MW of wind turbines to what will be, upon completion, the world's largest floating wind farm. Siemens has been contracted by Norwegian company Statoil to provide five of its SWT-6.0-154 direct drive offshore wind turbines for the 30 MW Hywind Scotland Project, an offshore floating wind project that is being developed 2 kilometers off the coast of Peterhead, in Aberdeenshire, Scotland. (4)

Offshore Wind

Samsung's 7MW offshore wind turbine on the Scottish coast at Levenmouth is set to become a training and research hub for the offshore wind industry after it was bought by the government-backed Offshore Renewable Energy (ORE) Catapult. ORE Catapult, the UK's flagship technology and innovation centre for offshore wind and marine technologies, announced the completion of the sale in December. The turbine - the most advanced in the world - will now become a centre for technology, maintenance and operations training for the next generation of offshore turbine. The purchase will help widen training access to the pioneering technology, driving down the cost of offshore wind, according to ORE Catapult chief executive Andrew Jamieson. (5)



Renewable Heat

Scottish Water has overseen the launch of the UK's first heat-from-sewage scheme at Borders College Galashiels campus in Scotland. The scheme, developed by tech firm SHARC Energy Systems, was designed to intercept wastewater from a sewer close to the local treatment works and uses a heat pump to amplify the natural warmth. The heat produced will be sold to Borders College under a 20-year purchase agreement and will provide around 95 per cent of the heat needed by the Galashiels campus, producing savings in energy, costs and carbon emissions. The system, installed using a £4 million investment from Equitix and the UK Green Investment Bank, is expected to save Borders approximately £10,000 a year for the next 20 years. (6)

East Lothian-based company, Sunamp, produces Heat Batteries that store energy as heat, which can be released on-demand to provide heat and hot water. They are super-compact because they contain an innovative material that stores four times more energy than hot water tanks. Around 550 Castle Rock Edinvar Housing Association tenants are among the first in the UK to benefit from lower fuel costs thanks to this technology. The homes are included in a trial backed by a £3.2m grant from the Local Energy Challenge Fund, running in tandem with a Solar PV programme, which is underway in 650 properties in central Scotland. (7)

Renewable Contribution

According to new data from DECC, renewable sources delivered 49.7% of Scotland's gross electricity consumption in 2014 – up from 44.4% in 2013. This means that the Scot-Govt. target of generating half of Scotland's electricity from renewable energy by 2015 has been met 12 months ahead of target. It also means that renewable energy sources are now the single largest contributor to electricity generation in Scotland at a record 38% of total output – higher than both nuclear (33%) and fossil fuels (28%) for the first time. (8)

Data from Ofgem shows that Scotland added 39 MW of solar PV capacity in 2015, a 28% increase in the space of a year. Cumulative capacity north of the border now stands at 179 MW. Of the total installed PV capacity in Scotland, 159 MW is fitted atop homes, with 40,000 households now boasting a solar array. At commercial scale, it is a more modest 850 business premises, but the trend appears to suggest that Scotland will continue to embrace solar in 2016 and beyond. (9)

The data confirms the continuation of a remarkable surge for the country's solar industry - in 2010, total installed solar capacity in Scotland stood at only 2MW. Regionally, Aberdeenshire continues to lead the way, accounting for over 10 per cent of the total capacity, according to the new figures. The counties of Fife and Highland are also Scottish solar hubs, while even Orkney has 337 solar installations. John Forster from the Solar Trade Association Scotland attributed the rise to Scottish building regulations, which support the installation of solar in new homes. However, further measures are needed to promote the installation of solar panels on existing homes, he said. (10)

Meanwhile, construction has begun on Scotland's largest solar farm - which will have 55,000 solar panels. 70 acres of land at Carse of Gowrie on the Errol estate, east of Perth, will be devoted to housing the solar panels. The 14MW scheme is expected to be operational by March, and will generate electricity all year round. Bristol-based firm Elgin Energy has designed the site. It is being built by Canadian Solar which will initially operate the facility. Canadian Solar will cover the site with

enough panels to power more than 3,500 homes, via the National Grid. Errol Estate was one of the first locations in Scotland to be identified as a potential solar farm site. (11)

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11 Local Energy

A French company, one-third owned by the French Government, which owns 40% of NuGen which is proposing to build 3 new reactors at Moorside in Cumbria, is planning to launch a new retail energy business in Britain.

Engie, the newly rebranded company formed from GDF Suez, is in talks with a string of British local authorities about the initiative. The company, which includes a subsidiary named Cofely employs 20,000 people in the UK and is the country's top independent electricity generator with 5,000 megawatts of gas, coal and hydro power stations, is a leading supplier of energy to business and wholesale customers.

Wilfrid Petrie, the new chief executive of Engie, said the new business would be unlike existing competitors in the British energy market as it would be offered to consumers through joint ventures



with local councils in big urban areas such as London, Birmingham, Southampton and Coventry. As well as gas and electricity, Engie would provide consumers with bundled energy services, which could include district heating from a centralised location, or piped hot and cold water for heating and cooling, as well as insulation, energy-efficiency products and small-scale generation in the form of solar panels or wind turbines.

Petrie says the new business will not involve necessarily building big pieces of new kit. “It’s very difficult today to build a new power plant [in the UK] with current market conditions,” he says. Instead, Mr Petrie wants Engie to offer localised services that could include installing insulation, district heating and solar panels on existing buildings as well as supplying gas and electricity. “We see the emergence of a new type of organisation within cities,” he says. Engie, he believes, can build on its relationships with councils and other commercial customers to expand its British business by developing local, decentralised energy in urban areas, where demand is high. “We don’t want to sell a huge amount of energy. Our big focus is on the demand side. The future is going to be much more about decentralized energy,” he says. Petrie pointed to the recent launch of Robin Hood Energy by Nottingham City Council as an example of the kind of services Engie could offer.

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