

# *Nuclear Free Local Authorities* new nuclear monitor



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## **NFLA Welsh Forum's response to Horizon Nuclear's local consultation on develop a new nuclear power station at Wylfa Newydd, Anglesey**

### **i. Overview of Policy Briefing**

This edition of New Nuclear Monitor outlines the Nuclear Free Local Authorities (NFLA) response to the latest round of public consultation by the developers of a proposed new nuclear reactor at Wylfa, Horizon Nuclear which closes on 25th October 2016. Details can be found here:

<http://consultation.horizonnuclearpower.com>

A previous consultation response was submitted by the NFLA in March 2016 and is available here:

[http://www.nuclearpolicy.info/wp/wp-content/uploads/2016/04/NFLA\\_New\\_Nuclear\\_Monitor\\_No41.pdf](http://www.nuclearpolicy.info/wp/wp-content/uploads/2016/04/NFLA_New_Nuclear_Monitor_No41.pdf)

Prior to that, NFLA responded to an earlier public consultation on Wylfa Newydd, which closed on 8th December 2014. That response is available here:

[http://www.nuclearpolicy.info/docs/nuclearmonitor/NFLA\\_New\\_Nuclear\\_Monitor\\_No36.pdf](http://www.nuclearpolicy.info/docs/nuclearmonitor/NFLA_New_Nuclear_Monitor_No36.pdf)

More recently NFLA has also made a submission to the House of Commons Welsh Affairs Select Committee on the future direction of Welsh energy policy. That submission is available here:

[http://www.nuclearpolicy.info/wp/wpcontent/uploads/2016/03/NFLA\\_New\\_Nuclear\\_Monitor\\_No40.pdf](http://www.nuclearpolicy.info/wp/wpcontent/uploads/2016/03/NFLA_New_Nuclear_Monitor_No40.pdf)

NFLA is co-organising a joint public meeting with the groups PAWB, CADNO and CND Cymru profiling this response and related matters. It is being held in Llangefni Town Hall on Saturday 19<sup>th</sup> November 2016. For further details go to <http://www.nuclearpolicy.info/events/nfla-wales-joint-public-meeting-with-pawb-cadno-and-cnd-cymru>.

### **1.1 No need for Wylfa**

The NFLA has already pointed out in its submission to Horizon in April 2016 (1) that the Overarching National Policy Statement (NPS) on Energy (July 2011) (2), which said that demand for electricity could double by 2050 because of the "*need to electrify large parts of the industrial and domestic heat and transport sectors*", is in urgent need of review.

Now, seven months later, that review is even more urgent.

Britain is consuming 17% less energy than it was in 1998, (3) and 15% less in 2014 than it was in 2000. (4) Official projections in 2006 were that today's electricity consumption levels would be more than 25% higher than they currently are. Despite our GDP having increased by 18% over the decade, demand for electricity has consistently fallen year on year, largely due to far more efficient usage. (5)

Germany, which is planning an entirely non-nuclear route, even with the same 2050 objective of an 80% reduction in greenhouse gases, expects electricity demand to be 25% below present levels by 2050 – compared with our doubling – by implementing energy efficiency programmes. (6) If, instead

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of planning for a doubling or tripling of electricity demand by 2050, the UK Government was planning for a reduction of 25%, as in Germany, then the capacity required by 2025 would fall by around 15%, removing the need for new nuclear reactors.

And there appears to be plenty of opportunity in the UK to continue reducing energy demand. The Government's own Energy Efficiency Strategy says 196TWh could be saved by 2020, equivalent to 22 power stations (or 9 nuclear stations the size of Wylfa B) (7) There are 100 TWh of electricity savings available for which there are currently no plans to capture which are detailed in a report for the UK Government by McKinsey. (8) A crash programme just on lighting efficiency which replaced all the lights in the UK with LED light bulbs could cut peak electricity demand by about 8GW, a saving of about 15% of all power consumption. (9) These are the kinds of cost effective energy efficiency improvements which drove the consultancy company Utilitywise to describe Hinkley Point C as an "*unnecessary expense*". In fact energy efficiency improvements could save £12 billion compared to the construction of Hinkley Point C. (10)

## 1.2 Electrifying Heat

The UK Government appears to favour replacing the use of gas for home heating with domestic-scale heat pumps, which partly explains why it expects a doubling of demand by 2050. There have been some very dismissive remarks made about this plan. Iain Conn, Chief Executive of Centrica has called the idea "mad". (11) The Labour Party's former energy team published a pamphlet called the "*Green Gas Book*". This pamphlet points out that electricity distribution networks could not cope with the huge fluctuations in demand on a really cold winter's day without extensive upgrading. On top of that every household with gas central heating would have to rip out their boiler and radiators and install a completely new system probably using ground or air-source heat pumps. This would be extremely expensive for each individual consumer and most people probably could not afford it without massive subsidies. And what is the point of ditching the UK's gas distribution grid, developed over many years and only recently upgraded with new pipes anyway? (12)

Jo Abbess in her book "*Renewable Gas: The Transition to Low Carbon Energy Fuels*" agrees that switching from gas to electric heating would put a huge strain on the power transmission and distribution system and entail constructing a large number of new power stations in a short space of time that would only be used for a few months of the year. It would make more sense, given that the UK gas grid currently carries 3 to 4 times more energy than the electricity grid, to convert to renewable gas making good use of the recently modernised gas grid. (13)

A report from a team at Imperial College says heat pumps are currently more expensive than equivalent gas boilers and only perform effectively and economically in well insulated buildings and may require radiators to be changed. And air-source heat pumps do not perform well in cold weather. By contrast the Imperial College team felt that gas heating was more flexible and was supportive of a shift to green gas, and district heating. (14)

The Policy Exchange Think Tank says it has identified significant weaknesses in the Government's approach, particularly the focus on electric heat pumps – it represents an extremely costly way to decarbonise heating. The Government's heat strategy suggests that heat pumps could provide more than 80% of domestic heating by 2050. This could cost in around £200 billion. In addition, an investment of around £100 billion would be required to expand and upgrade the power system to cater for the additional demand for electricity.

Policy Exchange says the Government's strategy has been contested by the energy industry, academics and commentators, who suggest that it would be very expensive and challenging to achieve in practice. Instead the Policy Exchange calls for Government to develop a new heat strategy, based on a more balanced set of priorities and technologies – incorporating substantial improvements in energy efficiency, more efficient gas appliances, greener forms of gas, and alternative heat technologies. It claims this approach could deliver the required reduction in emissions by 2050, but at substantially lower cost to the consumer. (15)

Policy Exchange says energy efficiency could reduce overall domestic heat demand by 20% by 2050. There is still significant potential to improve the efficiency of gas boilers and there is potential to decarbonise gas through the use of greener gases such as biomethane and biopropane, which can be produced from waste and organic matter.

### **1.3 Electricity Demand**

Total UK electricity demand was about 360TWh in 2014. Despite the fact that the NPS says that this could reach around 720TWh - by 2050, the latest Government scenarios only envisage increases in demand of between 29.6% and 52.9% by 2050 – taking demand to between 467TWh and 550TWh. (16) Friends of the Earth's September 2012 Plan for Clean British Energy looked at a scenario in which electricity demand reaches around 470TWh. Renewables provided 19.1% of electricity demand in 2014 or around 65TWh. In Friends of the Earth's scenario renewables grow to 348TWh by 2030. At the moment it looks as though the UK will miss its European target which requires it to produce around 30% of electricity supplies from renewable resources –about 108TWh in 2020 rising to 141TWh in 2030.

Although it is not clear what level of public subsidy Horizon might expect for Wylfa B, with onshore wind and solar projects now going ahead at much lower CfD strike prices than that promised for Hinkley Point C, it looks as though scenarios in which renewables expand much more rapidly than the 33TWh envisaged by the Government for the decade to 2030 will be much more attractive than continuing with nuclear expansion, even when the extra cost of grid balancing to deal with the variability of wind and solar is included. And crucially, offshore wind projects are now set to get a strike price of £85/MWh from 2026 compared with Hinkley's £92.50/MWh at 2012 prices. (17)

The sudden levelling off in the growth in renewables foreseen by the Government in the decade to 2030, compared with the previous decade means the benefits which could have accrued, as deployment grew, from a continuing growth in supply chains and reductions in costs will be thrown away.

### **1.4 Baseload**

The Government argues that nuclear is necessary to provide non-intermittent, low carbon electricity. It says whether or not the sun is shining or the wind is blowing nuclear will provide a secure base load. (18)

However, the concept of baseload power is increasingly being seen as obsolete. Dr Mark Diesendorf, Associate Professor of Interdisciplinary Environmental Studies at UNSW Australia says not only can renewables supply baseload power, they can do something far more valuable - supply power flexibly according to demand which means nuclear power really is redundant.

Diesendorf says underlying the claim that the UK needs more nuclear power to provide a secure baseload are three key assumptions. First, that baseload power is actually a good and necessary thing. In fact, what it really means is too much power when you don't want it and not enough when you do. What the UK needs is flexible power (and flexible demand too) so that supply and demand can be matched instant by instant. The second assumption is that nuclear power is a reliable baseload supplier. In fact it is no such thing. All nuclear power stations are subject to tripping out for safety reasons or technical faults. That means that a 2.7GW nuclear power station like Wylfa B has to be matched by 2.7GW of expensive 'spinning reserve' that can be called in at a moment's notice. The third is that the only way to supply baseload power is from baseload power stations, such as nuclear, coal and gas, designed to run flat-out all the time whether their power is actually needed or not. That is wrong too. (19)

If the UK really wants baseload power building new nuclear power stations is not the only way. Wind power with 'wind to gas' plant and CCGT gas power stations could do the same - faster, cheaper, more flexibly, and at much lower technical and financial risk, according to a report by Energy Brainpool for Greenpeace Energy. Under their proposal, surplus wind power is used in wind-to-gas facilities first to produce hydrogen (H<sub>2</sub>), then convert it to methane (CH<sub>4</sub>) which is then fed into the conventional gas distribution system or stored in already existing gas storage facilities

and later reconverted into electricity in combined-cycle gas turbine (CCGT) power plants when the need arises. Comparing this system with Hinkley Point C for example shows a saving of €7.2 billion over 35 years. (20)

Michael Liebreich, CEO of Bloomberg New Energy Finance says: “...*there are plenty of ways of managing intermittency in renewables without resorting to expensive backup power.*” (21) In fact, the more energy analysts look at how technology and energy markets are likely to develop over the next decade or so, the more they can see that in reality the idea of 'baseload' power is fast becoming obsolete. Variable renewables combined with stronger grids, energy storage and responsive demand can do a better job for less money. The old grid, beholden to massive, centralised baseload power plants, is being replaced by a nimbler, high-tech 21st century system oriented toward variable renewable energy. A grid based on smaller, distributed variable power sources can be just as reliable, and even more resilient and secure, than a grid reliant on baseload power. (22)

What an energy system with an increasing proportion of renewable capacity needs is not large baseload power stations, but flexible back-up which can be turned on and off quickly to provide electricity at peak times when renewables are not producing much. (23) Large baseload power stations, such as nuclear and large coal-fired power stations are not flexible because they are hard to turn on and off – they need to operate continuously 24/7.

What the UK and Welsh Governments should be asking is not “*how are we going to provide baseload power in future*” but what are we going to do with the expensive electricity from nuclear and other centralised power stations when renewables are supplying lots of electricity at very low or zero marginal cost?

A system powered 100% by renewables supported by a backbone of electricity storage, smart grid technology, demand management, energy efficiency, and 21st century technology is feasible now. In fact, not only is it feasible, but strong market and social forces are moving our energy systems in the decentralised direction very rapidly. As Rainier Baake, Germany's minister in charge of the Energiewende, points out, solar and wind have already won the technology race. (24)

Large centralised power stations are fast becoming the dinosaurs of the energy system. If Horizon Energy continues to cling to the old large-scale, centralised utility business model which is fast becoming obsolete it will put at risk the very existence of its parent companies.

## **2. Advanced Boiling Water Reactors**

As noted in NFLA's previous submission, there were only four operable Advanced Boiling Water Reactors (ABWR) in the world – all of them operating in Japan. Two more were under construction (Ohma and Shimane 3) at the time of the Fukushima disaster in 2011. As a result though of that disaster, at the time of writing only three of Japan's 54 reactors were operating – all of them Pressurised Water Reactors (PWR).

According to a 2013 paper on Boiling Water Reactors by the National Nuclear Laboratory the average load factor for the for ABWRs is only about 45% making it ***one of the least reliable reactor types in the world.*** This is explained as due to the short operating experience – so a bad year skews the load factor disproportionately. There were damaged turbines found at two of the reactors – a problem which it is claimed can be changed in future designs. The load factor was over 80% at two of the reactors before an earthquake in 2007. To summarise the NNL says that none of the problems suggest there are any inherent ABWR-specific problems now that the turbine issues have been resolved. It can be anticipated that ABWR availability in future will be comparable to other modern PWR and BWR designs. (25) Not exactly a ringing endorsement from a limited operating experience. It might be thought sensible to wait until there is more operating experience before building more reactors of the same type. But it is unclear when any of the Japanese reactors might restart operation. (26)

Another two ABWRs were being built in Taiwan at Lungmen. However, the Democratic Progressive Party elected in January 2016 has a policy of phasing out nuclear power by 2025, and writing off the reactors which had been under construction at Lungmen. (27)

There had also been plans to build a single ABWR at Visaginas in Lithuania, but the project was declared 'dead' in April 2016 by the former Minister who proposed the project. (28)

NFLA further notes that in recent elections in the Niigata prefecture where the Kashiwazaki-Kariwa reactors are located an anti-nuclear candidate was elected. Ryuichi Yoneyama, who was very much a political outsider, became the Governor largely on the basis of his vow to keep the nuclear power plant located there shut. NFLA notes as well that a local exit poll on the day of the election for NHK Japan showed that 73% of those voting opposed restarting the plant, compared to 27% who supported it. As this is the site of two of the only four operable ABWRs in the world, this is a significant blow to the project and Hitachi and its local operator TEPCO. (29)

As a result NFLA argue there is little commercial sense in developing the ABWR given its lack of a home market in Japan. Whether Hitachi will be able to raise the finance for a reactor-type which cannot find a market in its home country needs to be carefully considered by Horizon Nuclear and the UK / Welsh Governments. A repeat of the delays already seen at Hinkley Point, due to difficulties of securing finance, is more than possible.

### **3. Radioactive Waste**

It is worth repeating the point made in the last NFLA submission to the previous consultation. Radioactive waste with a radioactive content equal to around 70% of the radioactivity of all the existing UK legacy waste could well remain on-site at Wylfa for 140 years after the closure of the plant – until around the year 2230. (30)

A recent study in the US detailed how a major fire in a spent fuel pond “could dwarf the horrific consequences of the Fukushima accident.” The author Frank von Hippel, a nuclear security expert at Princeton University, who teamed with Princeton’s Michael Schoeppner on the modelling exercise said: “We’re talking about trillion-dollar consequences.” (31)

### **4. Nuclear Security**

The National Audit Office recently recognised that nuclear costs have increased in recent years particularly as a result of increasing terrorist threats. (32) The Office for Nuclear Regulation, has also recently expressed concern that “*There are areas where the duty holder’s security arrangements did not fully meet regulatory expectations.*” (33)

Europol, the EU’s Dutch-based counter- terrorism agency says in its annual report that “*Nuclear power plants and nuclear weapon facilities in the EU also remain potential targets for terrorists.*” (34). Yet there is very little information available on security arrangements in the consultation document. It should be noted, however, that the preferred location for the interim long-term store for spent fuel, and intermediate level radioactive wastes – perhaps the most vulnerable part of the proposed site – is right on the edge of the site boundary.

NFLA recommends Horizon Nuclear reads its recent assessment of nuclear security threats which outlines its concerns over the potential for an attack on a nuclear power station in the UK.

### **5. Planning Issues**

As noted in the NFLA’s previous consultation response, in September 1976 the Gwynedd Principal County Planning Officer published a report entitled “*The Impact of a Power Station on Gwynedd*”. This report looked at evidence from the four big construction projects in the County around that time. These were the Trawsfynydd (1959-63) and Wylfa (1963 -69) reactors – both nuclear power stations – the Anglesey Aluminium Smelter (1969 – 71) and the Dinorwig Pumped Storage Scheme (1974-80). He observed that while these projects were going on unemployment only dropped a little.

He commented:

*“...The completion of the large scale construction schemes in the County has often been followed by a rapid rise in unemployment ... The situation is much worse in a period of economic depression since it is difficult to create new jobs for local workers and migrant workers tend to stay in the area, adding to the number of unemployed. The pattern of events is well illustrated by the recent employment history in Gwynedd ... Thus, while it is difficult to prove conclusively, the evidence suggests that the long term effect of the major construction schemes in Gwynedd has been to help prevent the growth of employment in more stable industries as a result of the impact of large scale construction projects on low wage levels and labour supply”.* (35)

In other words past experience suggests that building a new nuclear power station in a remote area like Anglesey could have a detrimental effect on employment in the long term. Local companies cannot compete with the high wages offered on construction projects, so even if these projects are required to hire as much local labour as possible, rather than importing skills from outside, the projects can still have a detrimental effect. High wages on construction projects can hasten the decline of local companies. Perhaps more serious, in an area where a construction project is creaming off skilled and unskilled workers by offering high wages, this will act as a deterrent to new firms moving into the area. (36)

The overall workforce for the project is anticipated to peak at 10,720 in the last quarter of 2022. The construction Worker Accommodation Strategy expects to see 4,700 construction workers living in new-build permanent housing, empty homes brought back into use, and purpose-built Temporary Workers' Accommodation.

The total population of Anglesey is only around 68,600. So the influx of construction workers could amount to around 15% of the existing population.

There needs to be an assessment carried out of ways to avoid a large increase in unemployment on the Island as numbers of construction workers required tails off.

## **6. Welsh Language**

At the peak almost 8,000 of the workforce are likely to be from outside the travel to work area so are likely to be non-Welsh speakers. Horizon is reported to have said that the language measures contained in the proposed Gwynedd and Anglesey Local Development Plan (LDP) are *“too restrictive”*, and that failing to make changes could jeopardise the Wylfa Newydd. The LDP says that councils could refuse developments which would cause *“significant harm to the character and language balance of a community”*. Horizon has asked for the measure to be deleted from the final plan. NFLA is very concerned that Horizon has made such a suggestion.

Bringing in 8,000 construction workers from outside the ‘travel to work area’ is going to put the language under severe pressure. The Welsh Language Commissioner does not agree with Horizon’s views that the policy is not consistent with the guidance in relation to the Welsh language in planning. (37) Horizon has been forced to admit that it has *“made a bit of a mess of communicating”* its policies regarding the Welsh Language. The Welsh Language Society said this appears to confirm the negative effect Wylfa B will have on the Welsh language:

*“It’s also got to be asked: if they can’t even communicate clearly and honestly with the public, why should we trust them to run a nuclear power station?”* (38)

Concerns were compounded when the Planning Inspectorate arranged a public meeting at Llangefni without proper translation facilities. (39)

In the Welsh Language Impact Assessment Interim report Summary under the heading *“Effects of the Projects on the Welsh Language”*, there are five bullet points. Only one of these is negative:

*“In-migration of non Welsh-speaking construction workers into local communities will have an adverse effect on the Welsh language and culture by reducing the proportion of Welsh speakers in a community.”*

However, no consideration appears to have been given to the impact on the language after the project has been completed. Evidence from earlier large scale projects in the area suggests that the long term effect of the major construction schemes helps to prevent the growth of employment in more stable industries. The combination of a sudden drop in income for the area and non-Welsh speaking construction workers who decide to remain in the area after the project has finished could have a devastating effect.

## 7. Conclusion

In this consultation response NFLA has argued that:

- A new nuclear power station at Wylfa is not required due to falling energy demand and cheaper, smarter and more flexible renewable energy alternatives;
- Horizon is proposing to use one of the worst performing nuclear reactor types in the world, with none in operation at present;
- The development will be putting a unique Welsh speaking community at real risk by reducing the proportion of Welsh speakers in the island community;
- The local community will also be put at risk by being close to nuclear waste with a radioactive content equivalent to around 70% of the UK's existing legacy waste for at least the next 200 years;
- Parts of the development risk a major accident or terrorist incident occurring which, if they led to a spent fuel fire on the site, could have devastating consequences for large parts of Britain and Ireland.

As such, NFLA then calls for a halt to this development and for the parent company of Horizon to work with the local Council and the Welsh Government to promote sustainable alternatives.

## 8. References

- (1) NFLA Welsh Forum response to the latest round of public consultation on Horizon Nuclear application to develop a new nuclear power station at Wylfa, Anglesey, New Nuclear Monitor No.41 April 2016 [http://www.nuclearpolicy.info/wp/wp-content/uploads/2016/04/NFLA\\_New\\_Nuclear\\_Monitor\\_No41.pdf](http://www.nuclearpolicy.info/wp/wp-content/uploads/2016/04/NFLA_New_Nuclear_Monitor_No41.pdf)
- (2) Overarching National Policy Statement for Energy (EN1) DECC July 2011 [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/47854/1938-overarching-nps-for-energy-en1.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf)
- (3) Guardian 15<sup>th</sup> Aug 2016 <https://www.theguardian.com/business/economics-blog/2016/aug/15/uk-green-energy-sector-needs-nurturing-hinkley-point-nuclear>
- (4) Edie 31st August 2016 <http://www.edie.net/news/6/UK-plays-leading-role-as-European-Union-hits-energy-efficiency-target-six-years-early/>
- (5) Times 30<sup>th</sup> July 2016 <http://www.thetimes.co.uk/edition/comment/hinkley-and-the-hunt-for-an-energy-strategy-2gvb6jd6f>
- (6) Energy Concept for an Environmentally Sound, Reliable and Affordable Energy. Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, September 2010 <http://www.bmwi.de/English/Redaktion/Pdf/energy-concept.property=pdf.bereich=bmwi.sprache=en.rwb=true.pdf> (see page 5)
- (7) The Energy Efficiency Strategy, DECC November 2012 [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/65602/6927-energy-efficiency-strategy--the-energy-efficiency.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/65602/6927-energy-efficiency-strategy--the-energy-efficiency.pdf)
- (8) McKinsey, 2012 Capturing the full electricity efficiency potential of the U.K Draft report. <http://www.decc.gov.uk/assets/decc/11/cutting-emissions/5776-capturing-the-full-electricity-efficiency-potentia.pdf>
- (9) Ecologist 8th June 2016 [http://www.theecologist.org/blogs\\_and\\_comments/commentators/2987760/the\\_urgent\\_case\\_for\\_a\\_mass\\_switch\\_to\\_led\\_lighting.html](http://www.theecologist.org/blogs_and_comments/commentators/2987760/the_urgent_case_for_a_mass_switch_to_led_lighting.html)
- (10) Edie 1<sup>st</sup> Aug 2016 <http://www.edie.net/news/6/Energy-efficiency-would-be-cheaper-than-Hinkley/30645/>

- (11) Times 6<sup>th</sup> July 2016 <http://www.thetimes.co.uk/article/gas-chief-fires-up-row-over-switch-to-electric-heating-wt6f002xw>
- (12) Alan Whitehead 14th July 2016 [https://alansenergyblog.files.wordpress.com/2016/07/final-thegreen-gas-book\\_96pp\\_v5.pdf](https://alansenergyblog.files.wordpress.com/2016/07/final-thegreen-gas-book_96pp_v5.pdf)
- (13) Renewable Gas: The Transition to Low Carbon Energy Fuels” by Jo Abbess, Palgrave, 2015 <http://www.palgrave.com/br/book/9781137441799>
- (14) Energy System Crossroads – time for decisions. ICEPT Discussion Paper, Imperial College 2015 <https://workspace.imperial.ac.uk/icept/Public/Energy%20System%20Crossroads.pdf>
- (15) Richard Howard and Zoe Bengherbi, Too Hot to Handle? How to decarbonise domestic heating, Policy Exchange September 2016 <https://policyexchange.org.uk/publication/too-hot-to-handle/>
- (16) Nuclear Power: New Evidence, Together Against Sizewell C, 2015 <http://www.tasizewellc.org.uk/images/publications/reports/Nuclear-New-Evidence-final.pdf>
- (17) Environmental Research Web 6<sup>th</sup> Aug 2016 <http://blog.environmentalresearchweb.org/2016/08/06/nuclear-prospects/>
- (18) See Baroness Neville Rolf’s speech to the Bloomberg New Energy Finance Summit 10<sup>th</sup> October 2016, <https://www.gov.uk/government/speeches/baroness-neville-rolfes-speech-to-the-bloomberg-new-energy-finance-summit>
- (19) Ecologist 10<sup>th</sup> March 2016 [http://www.theecologist.org/News/news\\_analysis/2987376/dispelling\\_the\\_nuclear\\_baseload\\_myth\\_nothing\\_renewables\\_cant\\_do\\_better.html](http://www.theecologist.org/News/news_analysis/2987376/dispelling_the_nuclear_baseload_myth_nothing_renewables_cant_do_better.html)
- (20) Ecologist 17<sup>th</sup> February 2016 [http://www.theecologist.org/essays/2987195/wind\\_power\\_with\\_windgas\\_is\\_cheaper\\_and\\_greener\\_than\\_hinkley\\_point\\_c\\_nuclear\\_plant.html](http://www.theecologist.org/essays/2987195/wind_power_with_windgas_is_cheaper_and_greener_than_hinkley_point_c_nuclear_plant.html)
- (21) Green Alliance Blog 1st Oct 2013 <http://greenallianceblog.org.uk/2013/10/01/avoiding-an-energy-civil-war/>
- (22) Ecologist 7th Sept 2015 [http://www.theecologist.org/News/news\\_analysis/2985269/the\\_archaic\\_nature\\_of\\_baseload\\_power.html](http://www.theecologist.org/News/news_analysis/2985269/the_archaic_nature_of_baseload_power.html)
- (23) Clean Technica 4th Feb 2015 <http://cleantechnica.com/2015/02/04/big-expensive-power-plants-undermine-clean-energy-future/>
- (24) Green World 2nd Feb 2016 <http://safeenergy.org/2016/02/02/the-verdict-is-in/>
- (25) Boiling Water Reactor Technology: International Status and UK Experience, NNL 2013 [http://www.nnl.co.uk/media/1052/bwr\\_position\\_paper\\_final\\_web.pdf](http://www.nnl.co.uk/media/1052/bwr_position_paper_final_web.pdf)
- (26) World Nuclear Industry Status Report 2016 <http://www.worldnuclearreport.org/The-World-Nuclear-Industry-Status-Report-2016-HTML.html>
- (27) Nuclear Power in Taiwan, World Nuclear Association, 26<sup>th</sup> September 2016 <http://www.world-nuclear.org/information-library/country-profiles/others/nuclear-power-in-taiwan.aspx>
- (28) The Baltic Course 13<sup>th</sup> April 2016 <http://www.baltic-course.com/eng/energy/?doc=119397>
- (29) Reuters 17<sup>th</sup> October 2016 <http://www.reuters.com/article/worldNews/idAFKBN12h0QD?pagenumber=1&VirtualBrandChannel=0>
- (30) Geological Disposal: An overview of the differences between the 2013 Derived Inventory and the 2010 Derived Inventory, RWM Ltd July 2015 <https://rwm.nda.gov.uk/publication/differences-between-2013-and-2010-derived-inventory/>
- (31) Science 24<sup>th</sup> May 2016 <http://www.sciencemag.org/news/2016/05/spent-fuel-fire-us-soil-could-dwarf-impact-fukushima>
- (32) Nuclear Power in the UK, National Audit Office, 13<sup>th</sup> July 2016 <https://www.nao.org.uk/wp-content/uploads/2016/07/Nuclear-power-in-the-UK.pdf> (See para 2,11)
- (33) Office for Nuclear Regulation Annual Report and Accounts 2015/6, ONR 7<sup>th</sup> July 2016 <http://www.onr.org.uk/documents/2016/annual-report-2015-16.pdf> (see page 38)
- (34) EU Terrorism Situation and Trend Report (TE-SAT) 2016 Europol 20<sup>th</sup> July 2016 [https://www.europol.europa.eu/sites/default/files/publications/europol\\_tesat\\_2016.pdf](https://www.europol.europa.eu/sites/default/files/publications/europol_tesat_2016.pdf) (See page 13)
- (35) The Impact of a Power Station on Gwynedd”, Gwynedd Planning Officer, September 1976.
- (36) “Construction Projects Increase Unemployment”. New Scientist 4th May 1978.

- (37) Daily Post 1<sup>st</sup> September 2016 <http://www.dailypost.co.uk/news/north-wales-news/wylfa-newydd-developer-slammed-wanting-11827574>
- (38) Daily Post 5<sup>th</sup> September 2016 <http://www.dailypost.co.uk/news/north-wales-news/anglesey-nuclear-plant-developer-makes-11839817>
- (39) Daily Post 16<sup>th</sup> September 2016 <http://www.dailypost.co.uk/news/north-wales-news/anglesey-nuclear-plant-developer-makes-11839817>