

# *Nuclear Free Local Authorities* new nuclear monitor



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## **Consultation on the Horizon Nuclear (Hitachi-GE) pre-application proposal to build an ABWR new nuclear reactor at Wylfa, Anglesey**

### **1. Background to Briefing**

This edition of the NFLA's 'New Nuclear Monitor' has been developed for the NFLA Secretariat by the NFLA Scotland Policy Advisor. It provides an overview and NFLA model response to the Horizon Nuclear public initial consultation on its proposal to build a new Advanced Boiling Water Reactor (ABWR) at Wylfa in Anglesey. The consultation runs until 8<sup>th</sup> December 2014 and can be accessed at the following website : <http://consultation.horizonnuclearpower.com/>.

Exhibitions and public meetings are to be staged across North Wales as part of the consultation which is the first major step in the planning process.

Documents available include:

- A 40-page Consultation Overview Document;
- A 32-page Preliminary Environmental Information Report – non-technical summary;
- A 12-page Statement of Community Consultation;
- An 80-page Sustainability Scoping Assessment;
- A 60-page Health Impact Assessment Scoping Report;
- A 88-page Language Impact Assessment;
- A 200-page Consultation Document;
- A 330-page Preliminary Environmental Information Report Volume I;
- A 50-page Preliminary Environmental Information Report Volume II, which is mostly maps;

This edition of New Nuclear Monitor has resulted from a brief look at these documents, focussing on the full Consultation Document. Horizon Nuclear have been keen to point out from the start that the idea of building a new nuclear station at Wylfa is not open for discussion and nor is the idea of using the Advanced Boiling Water Reactor type.

Responses should be submitted via one of the following methods:

- By completing an online feedback form on this website:  
<https://wylfanewydd.dialoguebydesign.net/>
- Via a feedback form available at consultation events
- In writing to Horizon's freepost address: FREEPOST, HORIZON NUCLEAR POWER CONSULTATION.
- Via email at [wylfaenquiries@horizonnuclearpower.com](mailto:wylfaenquiries@horizonnuclearpower.com)

**34 YEARS AS THE LOCAL GOVERNMENT VOICE ON NUCLEAR ISSUES**

People Against Wylfa B (PAWB) said the Horizon documents would be a "hard read" for the average visitor to the exhibition. *"We know that people on the island have very real concerns about basic questions. The main concerns are the danger from nuclear waste, the security of the site and, of course, the economy - I don't just mean the local economy, which is a major concern, but the wider economy. This is a very expensive technology we're talking about - also the question of evacuating the island in the event of an emergency."* (1)

Virtually none of these issues are covered in any great depth in the Horizon documents.

## 2. Introduction

Horizon Nuclear Power, a company wholly owned by the Japanese firm Hitachi Ltd., is proposing to build a new nuclear power station with two 1,350MW UK Advanced Boiling Water Reactors (UK ABWR) to be supplied by Hitachi-GE Nuclear Energy Ltd., at Wylfa on Anglesey, costing around £10bn.<sup>1</sup>

The Isle of Anglesey County Council has published planning guidance which Horizon says it will consider. The guidance includes the Council's vision for the Project to be *"a positive driver for the transformation of the economy and communities on Anglesey, providing sustainable employment opportunities, improving the quality of life for existing and future generations and enhancing local identity and distinctiveness."*

Construction is expected to start in 2018/9 with operation beginning around 2025.

The Planning Act 2008 requires the promoter of a nationally significant infrastructure project to undertake pre-application consultation before making an application for a development consent order. Horizon has now launched the first stage of a two-stage pre-application consultation process about the Project.

The idea of this consultation is to *"...ensure that the Wylfa Newydd Project is developed in a way which seeks to meet the aspirations and objectives of consultees."* **So there is virtually no opportunity to question whether the project should go-ahead at all.**

The proposed new Nuclear Power Station is a National Strategic Infrastructure Project (NSIP) for the purposes of the Planning Act 2008. If it is to go-ahead it will need to be granted a development consent order by the Secretary of State. After an application for a development consent order is made the Planning Inspectorate would examine the application before making a recommendation to the Secretary of State, who would then determine the application. In examining the application the Planning Inspectorate would also take into account a report prepared by the local planning authority relating to local impacts, which sets out their views on the likely effect of the development on the local area and community. The Planning Act 2008 also requires the Planning Inspectorate to decide an application for energy infrastructure in accordance with the relevant National Policy Statements (NPSs) with limited exceptions such as when adverse impacts from the development outweigh the benefits. (2)

In other words, because the National Policy Statement on Energy has decreed that *"new nuclear power should be able to contribute as much as possible to the UK's need for new capacity"* and it expects industry to bring forward proposals for around 16GW of new nuclear capacity, the idea of building a nuclear power station at Wylfa is not up for discussion unless there are likely to be "adverse impacts" from this particular development which outweigh the benefits.

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<sup>1</sup> This compares to the estimated cost of the 3.2GW Hinkley Point C of £16bn (£14bn for construction and £2bn for development) but this could increase to £24.5bn according to the European Commission if financing costs and inflation are taken into account. But even using the £14bn this makes Wylfa on £3.7bn per GW compared with Hinkley's £4.375 per GW)

The consultation document makes it clear that there is no scope for influencing whether or not a nuclear power station is built at Wylfa, nor the use of Advanced Boiling Water Reactor (ABWR) technology.

It says “...*the principle of nuclear power generation at the Wylfa NPS Site is settled.*”

***In this briefing, NFLA argue that the project will result in adverse impacts which outweigh the benefits.*** It will disrupt the local economy and inhibit its transformation into one which provides sustainable employment opportunities. It will damage the quality of life for existing and future generations and damage local identity and distinctiveness.

On a national level planning, building and financing another new nuclear power station will detract from what really needs to be done to tackle climate change and fuel poverty. It will leave Wales and the wider UK with a legacy of nuclear waste for which there is still no national policy in place to deal with.

### **3. Does Wales and the wider UK need Wylfa?**

Horizon Nuclear says:

*“We believe there is a compelling requirement for new nuclear power in the UK to help tackle the vital and complex challenge of delivering a sustainable energy future. Horizon will deliver secure, affordable, low carbon energy for present and future generations.”*

The Overarching National Policy Statement for Energy (EN-1) states that the UK Government expects electricity consumption to double or even triple by 2050 as a result of the electrification of demand (such as for heating and transport). (3) Horizon says this consultation is proceeding on the basis that the need for the Wylfa Newydd Project is settled.

However, the NFLA note the UK Government’s own evidence shows something quite different. In March 2011, the UK Coalition Government published Pathways 2011 (4) presenting 16 different scenarios, detailing various ways forward regarding energy policy in order to both keep the lights on and achieve 80% CO<sub>2</sub> reductions by 2050. Six of the 16 pathways showed there is no need for new nuclear reactors. And only nine of the pathways showed anything like a doubling of electricity demand.

A major independent study published in 2011 shows the UK and the wider world can produce 100% of the energy it needs from renewable sources by 2050. (5)

UK total electricity consumption is currently around 328 Terawatt Hours per Year (TWh/yr) (1TWh = 1 Billion kWh) and energy consumption is around 1635TWh/yr. Wylfa B might be expected to produce 20TWh/year if it manages to operate at an unlikely 90% load factor. But the Government’s plans are currently missing out on: 155TWh/year of electricity generated by offshore wind (6); about 40TWh/year by implementing a comprehensive domestic energy efficiency programme by 2030; 100TWh/year of electricity saved through other efficiency measures (7); 22 – 140TWh/yr of electricity from solar PV on domestic roofs; 30TWh/yr of electricity from solar PV on industrial and commercial roofs; 140-190TWh/yr from solar farms – just using land currently used for growing biofuels (8).

The Sustainable Energy Association says energy solutions in buildings are some of the most cost effective methods of reducing the amount of carbon that is emitted and using resources efficiently; modelling suggests that prioritising these solutions would save the Government over £12billion per annum compared with current preferred options. Using the Department of Energy and Climate Change (DECC) Pathways calculator, the Association show that energy security and 80% CO<sub>2</sub> reduction can be achieved by less reliance on large scale generation and greater reliance on demand side and small-scale measures. There are 22 million homes in the UK, but only 18% of these have an Energy Performance Certificate (EPC) rating of C or above. By introducing an

“Energy in Buildings Strategy” which combines Microgeneration, Energy Efficiency, and Heat Strategy we can not only improve energy security, and reduce carbon, cost effectively but also cut consumer bills. (9)

The development of the Wylfa proposals by Horizon Nuclear have taken no notice of what is happening elsewhere in the world with respect to consumer drivers, energy technology development, falling renewable electricity costs, changing business models and energy system operation and management. (10) The development of renewable energy outside of the UK is quickly reducing the dominance of major utilities. In Germany for example, in terms of generating capacity the “big four” generators, Eon, RWE, Vattenfall and EnBW, had at the end of 2012 a combined installed capacity of 80 GW, less than 50% of the market.

In the UK pressure is building up on large utilities and having an impact on the top-down, narrow energy policy decision-making world. There are increasing levels of public dissatisfaction from households and individuals with the current energy system, the cost of energy, mistrust in main suppliers and the regulation of the market. This is leading to growing levels of switching from the ‘Big 6’ suppliers to independents, thereby increasing the potential for new entrants and challengers to be able to offer new services. In fact Citibank predicts that the ‘Big 6’ market share will fall from the current 92% to 70% by 2020. (11) At the same time, there is increasing consumer interest in taking control over energy use, including steps to reduce demand and/or generate power at the building or community scale, which will create further momentum for change within the energy system, from the bottom up. NFLA believe Councils can, and are playing a major role in this energy transformation.

It seems clear to the NFLA that the dominance of centralised energy systems has been broken. There is a slow but steady move from centralised to decentralised energy systems. This trend could quickly accelerate and Horizon could find itself with stranded assets before the Wylfa Newydd Project is completed.

NFLA notes over the last year a series of reports from financial and energy analysts have concluded that, amongst other things, conventional utility models are no longer fit for purpose. The reports highlight the changes to the old centralised utility model which are on the horizon and the importance of new technologies. These reports suggest that decentralised energy supply will be increasingly important in the future. A selection of such reports is listed below:

<p>UBS 20<sup>th</sup> August 2014 Will Solar, batteries and electric cars re-shape the electricity system?</p>	<p>UBS declares it is “<i>time to join the [solar] revolution</i>”. Large centralised power stations could be obsolete with 10 to 20 years, because they are too big and inflexible, and are “<i>not relevant</i>” for future electricity generation, according to the bank.</p>	<p><a href="http://tinyurl.com/qxqf2j2">http://tinyurl.com/qxqf2j2</a></p>
<p>HSBC – Energy Storage, Power to the People</p>	<p>Conventional generators will be the biggest losers from an upcoming energy storage boom, as both consumers and grid operators look to battery and other storage technologies.</p>	<p>Reported in Renew Economy 1 Oct 2014 <a href="http://tinyurl.com/kgj246n">http://tinyurl.com/kgj246n</a></p>
<p>Citi Research 28 July 2014. Energy 2020: The revolution will not be televised as disruptors multiply</p>	<p>“We predict that solar, wind, and biomass continue to gain market share from coal and nuclear into the future”.</p>	<p><a href="http://tinyurl.com/lsz8nf9">http://tinyurl.com/lsz8nf9</a></p>

IPPR, 8 <sup>th</sup> Sept 2014. A new approach to electricity markets: How new disruptive technologies change everything.	Tackling the policy trilemma of achieving an affordable, decarbonised and secure electricity supply is extremely challenging. The UK's electricity system, and the policy framework underpinning it, is holding back innovation and cost-reduction because it is propping up a large-scale, centralised utility business model that is fast becoming obsolete.	<a href="http://tinyurl.com/ok7a5g8">http://tinyurl.com/ok7a5g8</a>
Citibank	The big six energy suppliers are facing the loss of a quarter of their customers over the next six years	Reported in The Guardian 1 <sup>st</sup> Oct 2014 <a href="http://tinyurl.com/pcolxmz">http://tinyurl.com/pcolxmz</a>
Barclays	The disruptive impact solar power is having on traditional utilities was highlighted, after Barclays downgraded the US power sector over fears it will struggle to compete with increasingly low cost renewable energy.	Reported in Business Green 30 <sup>th</sup> May 2014 <a href="http://tinyurl.com/nakrrhm">http://tinyurl.com/nakrrhm</a>
Centre for Economics and Business Research	With a stable policy, large-scale solar projects are on track to becoming the cheapest way to generate electricity in the UK. It concludes that bold Government action to back British solar could create 60GW of generation capacity by 2030 – enough for 18 million homes – and support 50,000 jobs across its supply chain.	Reported in Business Green 25 <sup>th</sup> September 2014 <a href="http://tinyurl.com/n8hp3yd">http://tinyurl.com/n8hp3yd</a>
International Energy Agency, Press Release 29 <sup>th</sup> Sept 2014	Solar Power could become the dominant source of power by 2050.	<a href="http://tinyurl.com/k37u5yo">http://tinyurl.com/k37u5yo</a>
Exeter University, Energy Policy Dept. Governance and Disruptive Energy System Change. Sept 2014	Annex 1 gives a table of 11 investment bank reports	<a href="http://tinyurl.com/obdpwyg">http://tinyurl.com/obdpwyg</a>

Since the publication of the National Policy Statement on Energy in 2011, the cost of renewables has fallen rapidly and the trend of moving away from centralised utilities to smaller decentralised models has escalated much faster than expected. At the same time the cost of nuclear electricity has continued to increase. Investment bank, UBS calls the big, slow, lumpy, expensive coal and nuclear plants “*the dinosaur of the future energy system: Too big, too inflexible, not even relevant for backup power in the long run.*” In the medium to long-term these obsolete technologies are at risk of market defeat by a swarm of agile micro-power competitors. (12)

In the short-term building large-scale expensive power stations like Wylfa Newydd will soak up the limited available funds for subsidising low carbon electricity to the detriment of micro-power options which would be cheaper, more effective options and much quicker to implement. (13) It will, therefore, damage efforts to reduce carbon emissions by costing more per tonne of carbon dioxide saved and taking longer to implement. Since low carbon energy is mostly subsidised by levies on consumers' bills, it will also detract from efforts to tackle fuel poverty. In short, ***the adverse impacts of Wylfa Newydd will outweigh the benefits. The need for the station should, therefore, be re-examined.***

#### 4. Employment

Horizon says in the consultation document that the Wylfa Newydd project will create significant medium and long term employment in North-West Wales and inject many million pounds per year into the local economy. It claims up to 1,000 permanent jobs and approximately 1,000 additional jobs could be created during periods of outage for maintenance, presenting opportunities to draw on the experienced local skills base. Several thousand construction workers would be required, and numbers could reach 8,500 during peak periods (but would be around 4,000 most of the time). There would also be considerable additional opportunities generated for supporting businesses, such as catering, facilities management and logistics.

The population of Anglesey is around 70,000 and around three quarters of them are Welsh speakers. So the equivalent of up to 6% of the population is likely to come mostly from outside of the area for a seven year period 2017-25, and up to 12% will come from outside of the area at the peak of construction. This is likely to have a detrimental impact on critical issues like the availability of housing and the cost of rents.

In the long term, the Wylfa Newydd Project says it would also contribute to the Isle of Anglesey County Council's (IACC's) aspiration to create "*a world-renowned centre of excellence for the production, demonstration and servicing of low carbon energy*".

Until 1996 Anglesey was a District in the County of Gwynedd. In September 1976 the Gwynedd 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: Trawsfynydd (1959-63) and Wylfa (1963 -69) – both nuclear power stations - Anglesey Aluminium Smelter (1969 – 71) and the Dinorwig Pumped Storage Scheme (1974-80). He observed that while these projects were in place local unemployment only dropped a little.

*"...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". (14)*

In other words past experience suggests that building a new nuclear power station at Wylfa could actually 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 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. (15)

People Against Wylfa B (PAWB) has produced an alternative 'Manifesto for Sustainable Employment' for the area, which the NFLA welcome. It is available at the following weblink:

## 5. Environmental Impact Assessment

The size and nature of the proposed new Nuclear Power Station is such that it is classified as an EIA development under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (Infrastructure EIA Regulations). An Environmental Statement for the Wylfa Newydd Project will, therefore, accompany the application for a development consent order.

The European Environmental Impact Assessment (EIA) Directive includes special provisions for cases in which a project implemented in one Member State is likely to have significant effects on the environment of another Member State. Similarly, the 1991 UNECE Convention on Environmental Impact Assessment in a Transboundary Context, known as the Espoo Convention, introduces specific rules for conducting an EIA of activities located on the territory of one contracting party, defined as the Party of origin, and likely to cause significant adverse trans-boundary impact in another contracting party, defined as the affected Party. Given the proximity of the Irish Republic and Northern Ireland there should be maximum consultation on the Wylfa EIA with national, devolved and local authorities on the island of Ireland. (16)

Part II of Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 also requires:

*“An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for the choice made, taking into account the environmental effects.” (17)*

Given the rapid changes in the UK energy industry detailed in the table above this should be interpreted in the widest possible way. If the large centralised utility model is becoming obsolete then continuing with the Wylfa Newydd project needs to be compared with a decentralised alternative for North Wales.

The ideas put forward by Friends of the Earth North Lakes and West Cumbria for a Sustainable Energy Future can also be applied to North Wales: [http://www.no2nuclearpower.org.uk/wp/wp-content/uploads/2013/06/Towards\\_Sustainable\\_Cumbria\\_210613.pdf](http://www.no2nuclearpower.org.uk/wp/wp-content/uploads/2013/06/Towards_Sustainable_Cumbria_210613.pdf)

This report is updated regularly with news about the onward march of micro-power from around the UK at: <http://www.cumbrianenergyrevolution.org.uk>

## 6. ABWRs

NFLA notes that estimates for the cost of building two EPR reactors at Hinkley Point are still rising. The EU recently indicated it thought the total bill might be higher than £24bn, although EDF, the site owner, still says that its figure is about £16bn. Using the lower number, the cost per kilowatt of capacity is almost £5,000. There appears to be an attempt to blame this high cost on the complexity of the EPR design. The Hinkley Point design already seems to be regarded as a failure and in Finland and Normandy, where EPRs are already under construction, delays of several years and enormous cost overruns are crippling the projects. Some believe that the AP1000 or ABWR could be built for £2,800/kW. One commentator said by focusing on the increasingly unpopular EPR design, the UK may have saddled itself with an unmanageable and hugely expensive construction project that will sour the prospects of all other nuclear technologies for another generation. (18)

But the NFLA notes that evidence points to ABWR technology being just as likely to be problematic as EPRs. According to the journal 'New Civil Engineer' there are four ABWRs currently in operation in Japan, built to time and budget. (19) But none of these had a capacity factor (before they were closed down after Fukushima) above 73% and two have capacity factors of less than 40%. A capacity factor is the amount a plant generates compared to the amount that would be generated if it was operating at full power all of the time. Nuclear power plants are costed on the basis that they

will achieve capacity factors of 80-90 per cent. With a capacity factor of 40 per cent any nuclear power project comes out needing twice the power price to be an economic proposition. (20)

	Started construction	Commercial Operation	Capacity Factor	Ref
Kashiwazaki-Kariwa-6	3rd November 1992	7th November 1996	69.7%	(21)
Kashiwazaki-Kariwa-7	1st July 1993	2nd July 1997	63.8%	(22)
Hamaoka-5	12th July 2000	18th Jan 2005	38.7%	(23)
Shika-2	20th August 2001	15th March 2006	37.9%	(24)

In Japan, two further ABWRs – Shimane-3 and Ohma-1 - had started construction when the Fukushima crisis happened, so construction has been suspended. Nine other proposed ABWRs in Japan have been deferred or suspended. (25)

There are two 1350 MWe Advanced Boiling Water Reactors under construction at Lungmen, near Taipei. Construction began in 1999 with the intention of starting operation in 2004, but due to various problems, both political and technical neither reactor has opened. In April 2014, after 15 years, unit 1 was mothballed and unit 2 was cancelled. (26)

Plans to build two Toshiba ABWRs in South Texas are at the centre of a dispute over foreign ownership and its prospects look poor. (27)

The picture on Page 84 of the Consultation Document is probably Shimane 3, an ABWR which started construction in December 2005, but was suspended in 2011. In the NFLA's view it is important to note that **there are no ABWR reactors operating currently anywhere in the world.** Horizon would do well to suspend Wylfa now before any more money is wasted on the project.

## 7. Radioactive waste

Radioactive wastes categorised as intermediate level waste and spent fuel will need to be stored at the Power Station Site pending 'disposal', in the longer term, in a deep 'geological disposal facility' somewhere in England and Wales, if the current UK Government strategy ever comes to fruition.

Horizon indicates that interim storage buildings for intermediate level waste and spent fuel could be accommodated at the extreme south-west of the site – about as far from habitation as it is possible to get. This location is close to the site of the nuclear reactors. But Horizon also says it will work with Magnox Limited to explore the possibility that interim storage facilities could instead be located within the area of the existing Magnox power station site, following its planned decommissioning.

After more than 60 years of a civil nuclear power programme, the UK is still seeking a long-term solution for dealing with its higher activity radioactive waste. The search for a site to build an underground dump began almost forty years ago in 1976 when eight potential sites were selected. This fuelled massive public opposition to nuclear waste disposal, which forced the Government to back down and abandon the programme in December 1981. (28) Over the following 33 years the same story has repeated itself several times.

In 2003 a Government Energy White Paper rejected the idea of allowing new reactors to be built because there were issues about nuclear waste which needed to be resolved before proposals could be brought forward.

In 2006 the Committee on Radioactive Waste Management came about as close to solving the problem as has been possible so far. It made recommendations to the Government on managing radioactive waste but these dealt only with legacy waste – waste from existing reactors. CoRWM took no position on the desirability or otherwise of nuclear new build, but said that decisions on

whether or not to proceed with new reactors “...*should be subject to their own public assessment process [because they] raise different political and ethical issues when compared with the consideration of wastes which already exist*”.

Yet the UK Government ignored this caveat and, despite very limited progress on nuclear waste, claimed in its Nuclear National Policy Statement: “...*that effective arrangements will exist to manage and dispose of the waste that will be produced from new nuclear power stations*”. (29)

Even assuming all goes according to plan and a site is found to build a deep geological disposal facility (GDF), ‘disposal’ of (existing) legacy waste is expected to take until around 2130 (i.e. around 90 years). Disposal of new build wastes would begin once disposal of legacy wastes is completed (although some ILW might be disposed of earlier). It is also possible that spent fuel might need to be cooled for up to 100 years before disposal. And given that new reactors are expected to have a life of 60 years, it is possible that spent fuel may need to be stored at Wylfa for 160 years from the start of the station’s operation. (30)

Horizon says that to comply with the current temperature limit within the proposed GDF, Spent Fuel may need to be cooled for a period of between 60 and 140 years and that the top end of this range is being assumed for the UK ABWR in the GDA process.

***This means that spent fuel may be stored at Wylfa for the next 200 years.*** To all intents and purposes, as far as current Anglesey residents are concerned, this is a permanent nuclear waste dump. To paraphrase the 1976 Royal Commission on Environmental Pollution, it is the view of the NFLA that it is immoral to set out with the intention to produce a waste product which commits future generations to managing that waste for the indefinite future, so that it remains safely isolated from the biosphere and safe from any kind of malicious attack.

## **8. Emergency Planning**

Emergency Planning is one area of particular concern to Anglesey residents because of the difficulty of evacuating the island. Regulations require that arrangements are in place for responding to a nuclear or radiological emergency in advance of bringing nuclear fuel to the Power Station Site. It would make more sense to test the feasibility of developing a workable emergency plan before proceeding any further with these proposals. It is quite possible that any plan which involved the evacuation of 70,000 people across the Menai Straits would be impossible to implement.

There is only one major road access point into and out of the island of Anglesey. A major nuclear emergency incident at Wylfa B would be extremely difficult to deal with if a large amount of additional emergency resources are required for it.

## **9. Conclusions**

In the NFLA’s view, the global electricity market has changed significantly, rapidly and unexpectedly since the UK Government finalised its National Policy Statements on Energy in 2011. Several investment banks and financial and energy research organisations are now predicting an end to centralised utility models and large power stations. If these trends continue as expected at the current rate Horizon Nuclear could find itself with stranded assets before the construction of Wylfa Newydd has been completed.

Experience suggests to the NFLA that such a large construction project on a small island like Anglesey is likely to severely disrupt the local economy and could, in fact, lead to an increase in unemployment by the time construction is finished.

The NFLA note that the Advanced Boiling Water Reactor (ABWR) does not have a good operating record and there are currently no ABWRs operating anywhere in the world. Even if the UK’s plan to build a deep geological disposal facility goes according to plan, nuclear waste may need to be

stored on the island for the next 200 years. To all intents and purposes Wylfa will become a nuclear dump. There must also be a question mark over whether it is sensible to build a nuclear power station on an inaccessible island which may one day require the evacuation of 70,000 people.

The NFLA also note there are alternative and more sustainable ways of developing the local economy and these alternatives should be thoroughly investigated as part of any environmental impact assessment process.

In short the NFLA believes the Wylfa Newydd **project will result in adverse impacts which outweigh the benefits and should be cancelled.**

## 10. References

- (1) BBC 29<sup>th</sup> September 2014 <http://www.bbc.co.uk/news/uk-wales-north-west-wales-29402167>
- (2) Overarching National Policy Statement for Energy (EN-1), DECC, July 2011 para 1.1.2  
<http://www.decc.gov.uk/assets/decc/11/meeting-energy-demand/consents-planning/nps2011/1938-overarching-nps-for-energy-en1.pdf>
- (3) Overarching National Policy Statement for Energy (EN-1), DECC, July 2011 para 3.3.14  
<http://www.decc.gov.uk/assets/decc/11/meeting-energy-demand/consents-planning/nps2011/1938-overarching-nps-for-energy-en1.pdf>
- (4) 2050 Pathways, 2011, DECC March 2011.  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/68821/2050-pathways-analysis-response-pt1.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/68821/2050-pathways-analysis-response-pt1.pdf)
- (5) The Energy Report: 100% Renewable by 2050, WWF, Ecofys and OMA 2011  
[http://www.ecofys.com/files/files/wwf\\_ecofys\\_2011\\_theenergyreport.pdf](http://www.ecofys.com/files/files/wwf_ecofys_2011_theenergyreport.pdf)
- (6) A Plan for Clean British Energy, FoE September 2012  
[http://www.foe.co.uk/sites/default/files/downloads/plan\\_cbe\\_report.pdf](http://www.foe.co.uk/sites/default/files/downloads/plan_cbe_report.pdf)
- (7) See Energy Price Freeze, NuClear News No.58, January 2014  
<http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo58.pdf> This mainly draws on 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>
- (8) The Treasury and the Cost of Solar in the UK, by Ben Cosh, Solar Power Portal 20<sup>th</sup> December 2013  
[http://www.solarpowerportal.co.uk/guest\\_blog/the\\_treasury\\_and\\_the\\_cost\\_of\\_solar\\_in\\_the\\_uk\\_2356](http://www.solarpowerportal.co.uk/guest_blog/the_treasury_and_the_cost_of_solar_in_the_uk_2356)
- (9) Sustainable Energy Association Manifesto 2015 <http://sustainableenergyassociation.com/wp-content/uploads/2014/07/ManifestoSEA.pdf>
- (10) Governance and Disruptive Energy System Change, Mitchell, Froggatt and Hoggatt, IGov 22<sup>nd</sup> September 2014 <http://projects.exeter.ac.uk/igov/wp-content/uploads/2014/09/Post-stuttgart-1-final-paper.pdf>
- (11) Guardian 1st October 2014 <http://www.theguardian.com/business/2014/oct/01/big-six-energy-firms-lose-quarter-customers-2020-analysts>
- (12) Climate Spectator 24th October 2014  
<http://www.businessspectator.com.au/article/2014/10/24/renewable-energy/here-come-rest-micropowers-quiet-takeover>
- (13) Dave Toke's Blog 13<sup>th</sup> Oct 2014 <http://realfeed-intariffs.blogspot.co.uk/2014/10/hinkley-c-deal-likely-to-wipe-out-uk.html>
- (14) The Impact of a Power Station on Gwynedd", Gwynedd Planning Officer, September 1976.
- (15) "Construction Projects Increase Unemployment". New Scientist 4<sup>th</sup> May 1978.
- (16) Guidance on the Application of the Environmental Impact Assessment Procedure for Large-scale Transboundary project, European Commission, 2013.  
<http://ec.europa.eu/environment/eia/pdf/Transboundry%20EIA%20Guide.pdf>
- (17) Town and Country Planning (Environmental Impact Assessment) Regulations 2011  
<http://www.legislation.gov.uk/uksi/2011/1824/made>
- (18) Carbon Commentary 22<sup>nd</sup> Oct 2014 <http://www.carboncommentary.com/2014/10/22/cambridge-nuclear-engineer-casts-doubt-on-whether-hinkley-point-epr-nuclear-plant-can-be-constructed/>
- (19) New Civil Engineer 30th October 2012 [http://www.nce.co.uk/news/energy/hitachi-to-build-up-to-ninew-nuclear-plants-in-uk/8637882\\_article](http://www.nce.co.uk/news/energy/hitachi-to-build-up-to-ninew-nuclear-plants-in-uk/8637882_article)
- (20) David Toke's Green Energy Blog 30th October 2012  
<http://realfeedintariffs.blogspot.co.uk/2012/10/hitachi-bid-more-fantasy-nuclear-power.html>

- (21) World Nuclear Association website (accessed 23<sup>rd</sup> October 2014) <http://world-nuclear.org/NuclearDatabase/reactordetails.aspx?id=27570&rid=BF928D6F-9277-4E05-BF0F-2658DC973FEA>
- (22) World Nuclear Association website (accessed 23<sup>rd</sup> October 2014) <http://world-nuclear.org/NuclearDatabase/reactordetails.aspx?id=27570&rid=15DA1AEF-B63E-4EBA-827B-7280559C93B1>
- (23) World Nuclear Association website (accessed 23<sup>rd</sup> October 2014) <http://world-nuclear.org/NuclearDatabase/reactordetails.aspx?id=27570&rid=F98DE7C7-0F7F-467C-B98C-8E633BBD50D5>
- (24) World Nuclear Association website (accessed 23<sup>rd</sup> October 2014) <http://world-nuclear.org/NuclearDatabase/reactordetails.aspx?id=27570&rid=A14A17FA-9566-494A-8975-2B6D5F8D41E8>
- (25) Nuclear Power in Japan, World Nuclear Association September 2014 <http://www.world-nuclear.org/info/Country-Profiles/Countries-G-N/Japan/>
- (26) Nuclear Power in Taiwan, World Nuclear Association, July 2014, <http://www.world-nuclear.org/info/Country-Profiles/Others/Nuclear-Power-in-Taiwan/>
- (27) World Nuclear Industry Status Report 2014, <http://www.worldnuclearreport.org/IMG/pdf/201408msc-worldnuclearreport2014-lr-v4.pdf>
- (28) History of Nuclear Waste Disposal Proposals in Britain. No2Nuclear Power Briefing, 2006 <http://www.no2nuclearpower.org.uk/radwaste/history-of-nuclear-waste-disposal-proposals-in-britain/>
- (29) National Policy Statement Volume II Annex B para B5.1 [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/37052/1943-nps-nuclear-power-annex-volII.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/37052/1943-nps-nuclear-power-annex-volII.pdf)
- (30) The arrangements for the management and disposal of waste from new nuclear power stations: a summary of evidence, DECC November 2009 [http://www.umweltbundesamt.at/fileadmin/site/umweltthemen/umweltpolitische/SUP/SUP\\_UK\\_NPS/Waste/wasteassessment.pdf](http://www.umweltbundesamt.at/fileadmin/site/umweltthemen/umweltpolitische/SUP/SUP_UK_NPS/Waste/wasteassessment.pdf)