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To: [Wylfa Newydd](#)
Cc: [REDACTED]
Subject: Reg. ident. number 20011101: Registration for project Wylfa Newydd Nuclear Power Station with the Planning Inspectorate
Date: 14 August 2018 17:55:28
Attachments: [NFLA Wylfa planning submission.pdf](#)
[NFLA New Nuclear Monitor No54 Wylfa B planning application.pdf](#)

Dear Mr White,

If I'm right, the deadline for the German public concerned to submit a presentation is tonight.

Would you please be so kind and add to my presentation (Reg. ident. number 20011101) that I strongly support the presentation of NFLA. Two documents attached. A lot of the disturbing issues that NFLA raised make clear that radiation from the planned project can also affect Germany.

Thank you very much.

Kind regards,

Brigitte Artmann

Von meinem Samsung Galaxy Smartphone gesendet.

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Information

NFLA media release, for immediate release, 13th August 2018

NFLA submits its views on the Wylfa B new nuclear planning application to the Planning Inspectorate outlining a litany of concerns

The Nuclear Free Local Authorities (NFLA) has registered with the Planning Inspectorate's inquiry considering Horizon Nuclear's application for a 'Development Control Order' to build nuclear reactors at the Wylfa site in Anglesey. NFLA today publishes its core concerns with this application and why it thinks the application should be rejected. (1)

Under the Government's National Policy Statement process, many of the core issues around new nuclear build are supposed to have been decided upon by Parliament, and these inquiries rather consider issues of 'local' impact. Yet, the Government is currently consulting on an update of this process given that not one new nuclear reactor is near to being approved since the statement was agreed by Parliament almost a decade ago.

For NFLA, it is highly regrettable that the consideration of Horizon Nuclear Power's application for a Development Control Order for the Wylfa Newydd Nuclear Power Station is reliant on Government National Policy Statements which are totally out of date. Nuclear power stations are clearly not economically competitive, cannot be built when required by 2025 and energy efficiency measures and cheaper low carbon energy alternatives mean there is no longer a need for them.

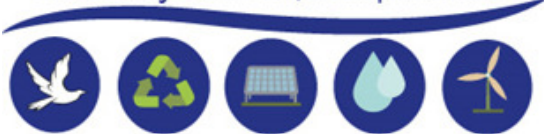
In what will form its full written response to the Planning Inspectorate, NFLA argue:

- The proposal put forward by Horizon Nuclear Power for this particular site on the Island of Anglesey is totally inappropriate and should not be approved.
- Building such a large infrastructure project in a remote rural area like Anglesey is likely to increase local unemployment in the longer term, and have a disruptive impact on the local economy. Going ahead with Wylfa Newydd is likely to detract attention from the far greater job-creating potential of other industries, such as a domestic energy efficiency programme, and the offshore renewable industry, and may actually dissuade companies from setting up in Anglesey, as well as damaging existing industry, such as tourism and agriculture, which rely on the areas reputation for a clean environment to attract business.
- It is also likely to be particularly disruptive to the future of the Welsh Language on the island.
- Wylfa B would produce nuclear waste which would contain almost 70% of the radioactivity as the existing waste burden, and which will most likely need to be stored on the Anglesey site for at least the next 120 years.
- If there were an accident at Wylfa B which required the evacuation of an area similar to the area evacuated around Fukushima, experience suggests this would cause complete chaos because of the limited capacity of routes to the mainland.
- Given that alternatives to Wylfa B do exist which are cheaper and can be implemented more quickly, it is particular perverse to accept the rather devastating impact the proposals will have on designated conservation sites.
- The impact of sea level rise on the proposed site needs to be thoroughly examined in the light of the latest scientific projections on the impact of climate change.

NFLA UK and Welsh Forum Co-Chair, Councillor Ernie Galsworthy said:

"NFLA are responding to this local planning inquiry given its consistent belief that new nuclear facilities are not the primary answer for delivering low carbon energy. And that's without even talking of the waste, the emergency planning, the environmental or the safety concerns from a new nuclear programme. The Government's imposed National Policy Statement process prevents a full and detailed forensic inquiry

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of a Wylfa B development, as it precludes fundamental areas of concern somehow considered by Parliament in a vote from a decade ago, which seems a completely ridiculous way to go about a planning inquiry to me. Wylfa B is not the answer to our future energy needs – instead we should pursue a wide renewable energy mix, energy efficiency and energy storage schemes that would be cheaper and more easily deliverable.”

Ends - for more information please contact Sean Morris, NFLA Secretary, on 00 44 (0)161 234 3244.

Notes for editors:

- (1) NFLA New Nuclear Monitor 54, 'Responding to Horizon Nuclear's Development Control Order application for Wylfa B', August 2018

http://nuclearpolicy.info/docs/nuclearmonitor/NFLA_New_Nuclear_Monitor_No54.pdf

NFLA New Nuclear Monitor Policy Briefing



Edition Number 54, 13th August 2018

NFLA Welsh Forum submission to Horizon Nuclear Power Application for a Development Control Order for Wylfa B - Relating to Wylfa Newydd Nuclear Power Station Planning Inspectorate Reference: EN010007

i. Overview of Policy Briefing

This edition of the NFLA's New Nuclear Monitor provides an overview of its response to Horizon Nuclear's application for a Development Control Order for Wylfa B. This application will be considered by the National Planning Inspectorate. This submission has been developed for the NFLA Welsh Forum by the NFLA Steering Committee's Policy Advisor. NFLA has also registered with the Planning Inspectorate to inform it of these views prior to the closing date of the 13th August.

1. Background to the NFLA submission

The Department for Business, Energy and Industrial Strategy (BEIS) has been working on a new National Policy Statement (NPS) for nuclear power above 1GW single reactor capacity for deployment between 2026 and the end of 2035. A consultation on the siting criteria and process was the first step. A consultation was held between 7 December 2017 and 15 March 2018. (1)

The Government issued a response to the consultation in July 2018. (2) It expects to consult on a draft list of sites, as part of a consultation on a draft Nuclear NPS in spring/summer 2019 and to publish a final list of potentially suitable sites as part of the final nuclear NPS.

However, the proposed new NPS simply carries forward the designated sites from the current NPS, and suggests that new sites may be designated in the 2020s.

The Government says the current nuclear NPS (EN-6) sets out the need for nuclear power, whilst also providing planning guidance for developers and for the Planning Inspectorate and Secretary of State in their consideration of applications.

In its response to the 2017/18 NPS consultation the NFLA pointed out that when the Government first endorsed Hinkley Point C, (HPC) it was projecting an increase in electricity consumption of 15% by now, whereas in practice the UK is now consuming 15% less than a decade ago. In other words it made a 30% error.

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A MEMBER OF ICAN – NOBEL PEACE LAUREATE 2017**

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The NFLA submission, therefore, questioned the “need” for new nuclear power stations before or after 2025. (3) The 2011 NPS (EN-6) had been based on an analysis outlining different ‘pathways’ to 2050 published by the Department for Energy and Climate Change (DECC) in 2010 which predicted that “*electricity generation may need to more than double*”. Yet the potential for energy saving was not fully assessed by Government until after EN-6 had been approved.

The Overriding NPS on Energy (EN-1) said the Government believes that nuclear power is economically competitive with other forms of generating technology. This too has proven to be incorrect. The National Audit Office (NAO) reported in June 2017 that the “*deal for Hinkley Point C has locked consumers into a risky and expensive project with uncertain strategic and economic benefits.*” (4) As Mike Thompson, Head of Carbon Budgets at the Committee on Climate Change says “*It is increasingly apparent that renewables do or will offer the lowest cost of electricity over their lifetime of all generating options.*” (5)

The electricity system has changed radically since EN-1 and EN-6 were designated in 2011. As Michael Grubb, Professor of International Energy and Climate Change Policy at University College London, told the House of Lords Selected Committee on Economic in 2016, although he had supported new nuclear during his time on the Committee on Climate Change, he felt “*times and conditions had substantially changed ... renewables are now clearly cheaper. Committing to a 35-year contract at that level was economically inappropriate*”

He continued in his submission to the Committee: “*renewable energy costs ... appear almost to have halved in the past few years ... We now have more than 10 gigawatts of solar, when the cost projections were that we would get 1.5 gigawatts by about this time ... It is now clear that in the electricity sector we will be delivering more renewables than the Government planned for or expected by 2020.*” (6)

Regrettably the Planning Act 2008 does not allow the National Infrastructure Planning Inspectorate to examine the merits of Government policy set out in a designated national policy statement. So despite the fact that EN-1, upon which EN-6 depends, has been shown to be completely out-of-date and needs to be completely re-written, the application by Horizon Nuclear Power for an Order Granting Development Consent for the Wylfa Newydd will have to be decided on the basis of these designated NPSs.

Nevertheless, ***NFLA argues here that the particular proposals put forward by Horizon Nuclear Power for this particular site on the Island of Anglesey is totally inappropriate and therefore should not be approved.***

2. Wylfa B – the impact on local employment.

The Environmental Statement – Non Technical Summary (para 1.1.5) says:
“*The Wylfa Newydd Project would create 850 permanent jobs, with a construction workforce of approximately 4,000 rising to approximately 8,500 workers at the peak of construction. It would also bring benefits to north Wales and local communities, not only through employment and training opportunities but also from the demand for local goods and services.*”

The Population of Anglesey is less than 70,000. The Wylfa construction workforce at its peak would therefore be ***around 12% of the current population.***

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) – 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*".

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.

The Gwynedd report suggests that rather than hiring local labour construction firms tend to import skilled labour from outside of the area.

With Dinorwig, contractors were required to hire and train local people whenever possible. Of nearly 2,400 workers in 1977 somewhere between half and three-quarters were local. But this isn't necessarily in the long-term interests of the area either. The Dinorwig scheme was competing with local firms for skilled people from a relatively small pool.

At Trawsfynydd the Gwynedd report found that of the 120 management and engineering staff 95% were from outside. Of the 460 administrative and industrial staff 65%-70% were local, but primarily construction staff who had stayed behind or skilled staff stolen from local firms.

The report concludes that Power Stations "*increase unemployment over the longer-term*" (7)

3. The Problem of Temporariness

Temporariness is a key feature of DCOs which makes them unsuitable as a vehicle for local economic development. The only permanent structure a DCO for a road or a bridge can permit is the road or the bridge itself. Any ancillary offices or stores are simply there for the duration of the build. So when a new nuclear power station is built, the surrounding community cannot expect any 'Legacy Build' from things like the residential accommodation blocks. These would require a separate Planning Application which complicates matters as far as the developer is concerned.

This is in marked contrast to a project like the London Olympics or the Glasgow Commonwealth Games which have both had permanent legacy value for the two cities.

Experience from the Hinkley Point C development suggests that developers fight relentlessly to avoid the expense of infrastructure improvements, such as road by-passes, unless they are entirely for their own benefit, despite any promises that sub-projects would also benefit the local community. One road project carried out near Hinkley Point C for instance involved making a local 'rat run' more appealing to cars so that HGVs would be less inconvenienced on the proper route. (8)

4. **The ‘Gold Rush’ Economy**

Experience at Hinkley Point C (HPC) also suggests that local employers cannot compete with the 36% above average wages paid to HPC workers. Anecdotal evidence suggests that many local firms are adversely affected by losing workers to HPC.

Unemployment in Sedgemoor was only 0.9% before HPC got going and is just 0.4% now. The HPC workforce – there are 3,000 on site at the moment, rising to 5,600 at peak – can only be derived in one of two ways. Either local people give up their jobs and take their skill set to HPC, albeit temporarily, or workers come from further afield. EDF’s estimate of how many HPC jobs would be ‘local’ has fallen from an initial 50% to 25%. Their definition of what is ‘local’ is intriguing – any worker travelling from anywhere within 90 minutes’ drive time is classed as ‘Local’. For HPC, we’re talking about anywhere as far west as Exeter, north east to Bristol and south to the English Channel coast.

Soaring rents are not just a big city problem when huge infrastructure projects descend on small towns. Rents in Bridgwater, the town closest to HPC, have risen by about 8% in the last year. This extraordinary increase has put local people at risk of homelessness due to their inability to compete with the high wages paid to HPC workers.

David Eccles, EDF Spokesperson, has been quoted as saying "*Hinkley is delivering a massive boost to the economy of the whole South West and that means that some things get more expensive because more work for the Supply Chain means a better economy.*"

Stop Hinkley Spokesperson Roy Pumfrey says this callous attitude "*betrays a disregard for any local people unlucky enough to be caught under the wheels of the HPC juggernaut. A Gold Rush economy has arrived in Somerset and anyone expecting a major infrastructure project to arrive in their vicinity anytime soon should be aware of the implications for their neighbourhood.*"

Visitors to the area are finding it hard to find a simple Bed & Breakfast, so the tourist industry will undoubtedly be badly affected. (9)

5. **Impact on Anglesey**

There needs to be an assessment carried out of ways to avoid the negative impacts of a "*gold rush economy*" engendered by large infrastructure projects. Lessons can be learned from Somerset. Increases in rent, homelessness and a negative impact on tourism and services could be avoided.

Ultimately, a plan needs to be developed to avoid a large increase in unemployment on the Island as the numbers of construction workers required tails off.

6. **An alternative based on the needs of the local economy**

Spending allocated to the energy sector is finite. If these limited resources are spent on expensive options which are slow to be implemented we will, in effect, be worsening the local economic situation because each pound spent is buying less economic benefit than it would do if it were spent on more effective measures. Diverting investment from cheaper market winners, such as energy efficiency, combined heat and power, and renewables, to nuclear power means less economic benefit for every pound spent. If instead it were spent on options which are most effective we could maximise the economic benefit to Anglesey.

For instance, almost a quarter of households on the Island were suffering from fuel poverty in 2015 according to statistics released by the Welsh Government. (10)

Energy efficiency is the only permanent solution to fuel poverty. Yet progress on improving energy efficiency in UK homes has stalled in recent years as the UK's new nuclear programme has been gearing up. The UK Government's Climate Change Committee recently reported that home insulation rates have crashed by 95% since 2012. (11) The best available evidence on the remaining potential for energy efficiency improvements within UK residential buildings suggests there is a significant resource of untapped energy-saving opportunities in UK homes. Specifically, one quarter of the energy currently used in UK households could be cost effectively saved by 2035 and this could increase to one half if allowance is made for falling technology costs and the wider benefits of energy efficiency improvements. (12)

Primary energy consumption in the UK has now fallen by 19% since the start of the century even though our overall wealth has grown over that period by well over one-half. Overall electricity consumption continues to fall. Consumption fell by over 15% between 2005 and 2015. It went down, again, by 1% between 2016 and 2017. This means that we are now using less electricity than we were, say, in the mid-1990s. The 2006 Energy White Paper, which reinvented the need for 10 new nuclear power stations, said we should by now be consuming approaching 30% more electricity than we actually are. (13)

Average energy bills fell by £6 last year, according to the Energy and Climate Intelligence Unit (ECIU), with energy efficiency improvements more than offsetting price rises from suppliers. Yet nearly two-thirds of MPs mistakenly believe bills are rising. However, 73% of MPs do support for energy efficiency measures. ECIU says energy efficiency measures, are crucial for offsetting price hikes. (14)

Going ahead with Wylfa B is likely to detract attention from the far greater job-creating potential of other industries, such as a domestic energy efficiency programme, and the offshore renewable industry, and may actually dissuade companies from setting up in Anglesey, as well as damaging existing industry, such as tourism and agriculture, which rely on an areas reputation for a clean environment to attract business.

7. 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. 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. 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.

8. Construction Phase

The main construction phase for the power station is expected to take around seven years. The first UK ABWR would become operational at the end of that period, and the second UK ABWR would be operational approximately two years later. This takes us to around 2028-29. However, construction of the spent fuel storage facility would not commence until after the Main Construction, and will not be available for use approximately 10 years into the operational phase. Basically this means that disruptive construction work will be continuing in Anglesey until almost **2040**.

It is also worth noting that although all ABWRs in Japan were built very quickly – in 4-5 years - the reliability of the operating reactors has been poor. Hitachi-GE claim the ABWR will achieve an average load factor of 90 % (kWh produced over maximum possible kWh). The average for the operating ABWRs is about 60%. All the plants have undergone very lengthy

shutdowns, including dealing with issues raised by earthquakes and turbine failures. However, even in the years where the reactors were not affected by the need for seismic upgrades or turbine problems, performance was often mediocre. Load factors were seldom much higher than 80% and only reached the 90+% claimed by Hitachi-GE in four out of the 38 reactor years of experience. Even if the lengthy shutdowns were discounted, the average load factor would still be only about 70%. (15) In short, the ABWR is one of the least reliable reactors available. (16)

9. Nuclear Waste

The Power Station would have a design life of approximately 60 years. Once operational it would create radioactive wastes which would need to be processed and stored before they were ready to be removed from the site. Horizon is proposing a single combined spent fuel store and higher level radioactive waste storage facility, rather than two separate facilities. This would be constructed to be available ten years after the start of operation. It would provide storage facilities at the Power Station Site until the radioactive wastes could be re-packaged. Prior to this time, radioactive wastes would be stored within the radioactive waste building. The spent fuel generated would be stored within the spent fuel cooling pools.

Unlike spent fuel from the Wylfa A Magnox Station, which is being transported by train to Sellafield in Cumbria for reprocessing, the Government does not expect spent fuel from new reactors such as Wylfa Newydd to be treated in that way. In fact the Thermal Oxide Reprocessing Plant (THORP) at Sellafield which reprocesses oxide spent fuel (like that expected to be used at Wylfa Newydd) is due to close in 2018, and there are no plans to replace it.

The UK Government's Radioactive Waste Management Ltd. (RWM Ltd.) says the proposed new reactors for England and Wales will use high burn-up fuel (65 GW/tU) which will require a cooling period of up to 140 years before being emplaced in an underground repository – which could mean spent fuel stored on the Wylfa site for up to 200 years (i.e. 140 years after the reactor closes). However by the judicious mixing of long-cooled and short-cooled spent fuel it's possible the duration of storage after the end of power station operation could be reduced to the order of 60 years before disposal (i.e. storage for up to 120 years). (17)

In any case a Geological Disposal Facility (GDF) is not expected to be ready to receive waste until at least 2040. Waste from new reactors like Wylfa Newydd is not scheduled to be emplaced in the GDF until after all existing waste has been emplaced – a job which will take around 90 years –taking us to around 2130. So spent fuel from the proposed new reactors could remain on site for at least the next 120 years.

The nuclear industry and government repeatedly claim that the volume of nuclear waste produced by new reactors will be small, approximately 10% of the volume of existing wastes; implying this additional amount will not make a significant difference to finding an underground dump for the wastes the UK's nuclear industry has already created. (18) The use of volume as a measure of the impact of radioactive waste is, however, highly misleading. Volume is not the best measure to use to assess the likely impact of wastes and spent fuel from a new reactor programme, in terms of its management and disposal.

The 'high burn-up fuel' which Wylfa Newydd is expected to use will be much more radioactive than the spent fuel produced by existing reactors. So rather than using volume as a yardstick, the amount of radioactivity in the waste, which affects how much space will be required in a deep geological repository, are more appropriate ways of measuring the impact of nuclear waste from new reactors.

According to RWM Ltd, the radioactivity from existing waste (i.e. not including waste from new reactors) is expected to be 4,770,000 Terabecquerels (TBq) in the year 2200. The

radioactivity of the spent fuel alone (not including other types of waste) generated by a 16GW programme of new reactors is expected to be around 19,000,000TBq. Wylfa Newydd would be a 2.7GW station, so the amount of radioactivity in the spent fuel from Wylfa Newydd alone in the year 2200 would be 3,206,250TBq – or almost 70% of the radioactivity in existing waste. (19)

The impact of the nuclear waste produced by the proposed new reactors at Wylfa Newydd can also be examined in terms of the area of land underground likely to be taken up in comparison with the area taken up by existing waste. The area required will depend on the rock type used. (20)

Rock Type	Inventory of waste created by existing reactors	Inventory from existing reactors plus new 16GW programme	Inventory from 2.7GW reactors alone.
High Strength Rock	5.6km ²	12.3km ²	1.13km ²
Lower strength Rock	10.3km ²	25.0km ²	2.48km ²
Evaporite	8.8 km ²	24.1km ²	2.58km ²

It can be seen that the area required underground for waste ‘disposal’ for Wylfa Newydd is between 20 and 30% of the space required for existing waste.

The Committee on Radioactive Waste Management’s (CoRWM’s) 2006 recommendations included the observation that “... *the political and ethical issues raised by the creation of more wastes are quite different from those relating to committed – and therefore unavoidable – wastes*”. (21) Later the Committee elaborated saying: “... *a solution that is ethically acceptable for dealing with existing spent fuel is not necessarily a solution that would be ethically acceptable for dealing with new or changed materials.*” (22)

In other words, former CoRWM member Professor Blowers says: “*It is perverse to compound the problem by a new-build programme that will result in vastly increased radioactivity from spent fuel and other highly radioactive wastes which will have to be stored indefinitely at vulnerable sites scattered around our coasts.*” (23)

10. Alternatives Considered

Paragraph 2.5.1 of the Environmental Statement – Non Technical Summary states that: “NPS EN-1 and EN-6 set out the ‘urgent need for new electricity generation plant, including new nuclear power’. Eight sites, including Wylfa, were listed as potentially suitable for the deployment of new nuclear power stations by the end of 2025. This has clearly failed. It is now almost certain that no new nuclear power stations will be operational on any of the sites designated in the current NPS by 2025. The information provided in the Environmental Statement suggests that Horizon Nuclear expects to generate the first electricity from Wylfa Newydd around 2026-28.

Horizon says “*Alternative energy generating technologies and alternative locations have ... not been considered further as part of the assessment.*”

When it became clear that nuclear power is one of the most expensive ways of producing low carbon electricity, and that none of the proposed nuclear station were going to be ready before 2025, and given that the aims of EN-1 included, for example:

- to “*speed up the transition to a low carbon economy and thus help to realise UK climate change commitments*”
- and “*helping to secure affordable supplies of energy and minimising fuel poverty.*” [para 1.7.2];

the decision not to look at alternative ways of meeting demand should have been re-visited.

11. Emergency Planning

Wylfa's current emergency plans only covers a tiny 1.6km area around the nuclear site, with the 'possible' evacuation or providing potassium iodate tablets 'if necessary' to those living within 4km of a radiation disaster.

170,000–200,000 people were evacuated from 30km area following the Fukushima disaster of March, 2011. A similar radius around Wylfa would mean the clearing of almost the entire Island of Anglesey. The U.S. Embassy advised Americans in Japan to leave areas within "approximately 50 miles" (80 km) from the plant. A similar radius around Wylfa would mean the clearing of towns as far away as Llandudno in Gwynedd.

Quite how Anglesey's 70,000 population might be evacuated quickly over just two narrow bridges is unclear.

An alternative emergency control centre is proposed for a site 7.5km away from the proposed Wylfa Newydd reactors. There must surely be a question-mark over whether this location is sensible. Somewhere on the other side of the Menai Strait might be more appropriate.

The Fukushima disaster highlighted self-evacuation took place over a much wider area than the zone covered by current plans. Around Fukushima it is believed that 160,000 people evacuated, of which 80,000 were evacuated by the authorities - the rest left on their own. It took about two weeks to evacuate all parts of the initial 20 km (later 30 km) radius evacuation areas around the Fukushima reactors. The main reason for the delays was that many roads were jammed with gridlocks which sometimes lasted 24 hours a day, and for several days on some roads. These traffic jams were partly due to the poor existing road infrastructure and partly due to many road accidents. These jams were of such severity that safety crews for the Fukushima nuclear station had to be moved in and out mostly by helicopter. All public transport by trains and buses ceased. Mobile telephone networks and the internet crashed due to massive demand.

On the other hand thousands of people either refused to leave their homelands or returned later. Older farmers often refused to leave their animals behind or be moved from their ancestral lands. In at least a dozen recorded cases, older farmers slaughtered their cow herds rather than leave them behind (dairy cows need to be milked daily): they then committed suicide themselves in several instances.

Official Japanese Government data reveal that nearly 2,000 people died from the effects of evacuations necessary to avoid high radiation exposures from the Fukushima disaster, including from suicides. (24)

12. Ecological Impact

Given that, as the Committee on Climate Change has pointed out: "*if new nuclear projects were not to come forward, it is likely that renewables would be able to be deployed on shorter timescales and at lower cost*" (25) it would seem particularly perverse to accept the rather devastating impact the Wylfa Newydd proposals will have on local terrestrial and freshwater ecology.

There are six nationally and internationally designated sites within 2km of the Wylfa Newydd Development Area, the closest being Bae Cemlyn/Cemlyn Bay SSSI and SAC; Tre'r Gof SSSI, Cae Gwyn SSSI, and Morwenoliaid Ynys Môn /Anglesey Terns SPA. Tre'r Gof SSSI is particularly important as it is situated within the Wylfa Newydd Development Area. Other designated sites of interest within 2km include nine local Wildlife Sites and further afield

Ramsar, SPA and SAC sites. Within the Wylfa Newydd Development Area there are two areas of ancient semi-natural woodland and one restored ancient woodland site.

Cemlyn nature reserve is home to thousands of sandwich terns, which account for about a fifth of the birds' UK population and is the biggest on the country's west coast. Wildlife groups are concerned about the effect of noise and light from the power station's construction, as well as a reduction in food for the birds to forage on. Land clearance for the vast site is also expected to displace potential predators, such as rats and foxes. The terns are protected under the EU birds and habitats directive. (26)

There are three nationally or internationally designated marine-based nature conservation sites either within the Wylfa Newydd Development Area itself or within 100m of the Wylfa Newydd Development Area as set out below:

- Bae Cemlyn / Cemlyn Bay SAC and SSSI, primarily designated for its saline lagoon;
- North Anglesey Marine/ Gogledd Môn Forol candidate SAC, designated for the protection of harbour porpoise. Candidate SAC means it passed through public consultation as a possible SAC, and was submitted to the European Commission (January 2017); and
- Anglesey Terns SPA, primarily designated for four species of tern.

The Anglesey Area of Outstanding Natural Beauty (AONB) concentrated on the coast, extends into the western part of the Wylfa Newydd Development Area, and the North Anglesey Heritage Coast, is closely related to the Anglesey to the AONB in the vicinity of the Wylfa Newydd Development Area.

13. Sea Level Rise

A search of the disk containing Horizon's complete DCO application for the phrase "sea-level" or "sea-level rise" comes up with no results whatsoever.

In 2007, a report for Greenpeace by the Middlesex Flood Hazard Research Centre took as the basis for its worse-case scenario the collapse of the West Antarctic Ice Sheet (WAIS), which would trigger an abrupt and extreme rise in sea level, estimated at 5-6m. The report pointed out that there are widely divergent opinions on the likelihood of this extreme sea-level rise but one view is that WAIS collapse could begin in the 21st century.

In 2012 an assessment, carried out by the Department of Environment, Food and Rural Affairs, of the risk of flooding and storm surges for the UK's nuclear sites did not show a high risk of flooding and erosion by 2080 at Wylfa. (27) Nevertheless, it might be expected that Horizon would at least mention that it has looked into the risks to the site of sea level rise.

The 2012 assessment was before the increasing volume of melting of the Greenland ice cap was properly understood and when most experts thought there was no net melting in the Antarctic. Now estimates of sea level rise in the next 50 years have gone up from less than 30cm to more than a metre, well within the operating lifespan of Wylfa Newydd – let alone the period before final decommissioning of the reactors, and the period when spent nuclear fuel is likely to be stored on site.

Some researchers say sea levels could rise by six metres or more even if the 2 degree target of the Paris accord is met. Sustained warming of one to two degrees in the past has been accompanied by substantial reductions of the Greenland and Antarctic ice sheets and sea level rises of at least six metres – several metres higher than what current climate models predict could occur by 2100. (28)

In fact one group of researchers believe we could soon cross a threshold leading to boiling hot temperatures and towering seas in the centuries to come. Even if countries succeed in

meeting their CO₂ targets, we could still lurch on to this "irreversible pathway". The climate might stabilise with 4-5 degrees C of warming above the pre-industrial age. Thanks to the melting of ice sheets, the seas could be 10-60 metres higher than now. (29)

Do we really want to be building new nuclear facilities and waste stores which are likely to still be there in 125 years, on the coast when there is so much uncertainty about future sea-level rises?

14. Conclusions

The key conclusions from the NFLA to the Horizon Nuclear application are:

- It is highly regrettable that the consideration of Horizon Nuclear Power's application for a Development Control Order for the Wylfa Newydd Nuclear Power Station is reliant on Government National Policy Statements which are totally out of date. Nuclear Power stations are not economically competitive, cannot be built urgently by 2025 and energy efficiency measures mean there is no longer a need for them.
- Regardless of this, the particular proposal put forward by Horizon Nuclear Power for this particular site on the Island of Anglesey is totally inappropriate and therefore should not be approved.
- Building such a large infrastructure project in a remote rural area like Anglesey is likely to increase local unemployment in the longer term, and have a disruptive impact on the local economy. Going ahead with Wylfa Newydd is likely to detract attention from the far greater job-creating potential of other industries, such as a domestic energy efficiency programme, and the offshore renewable industry, and may actually dissuade companies from setting up in Anglesey, as well as damaging existing industry, such as tourism and agriculture, which rely on an areas reputation for a clean environment to attract business.
- It is also likely to be particularly disruptive to the future of the Welsh Language.
- Wylfa Newydd would produce nuclear waste which would contain almost 70% of the radioactivity in existing waste, and which will most likely need to be stored on the Anglesey site for at least the next 120 years.
- If there were an accident at Wylfa Newydd which required the evacuation of an area similar to the area evacuated around Fukushima, experience suggests this would cause complete chaos because of the limited capacity of routes to the mainland.
- Given that alternatives to Wylfa Newydd do exist which are cheaper and can be implemented more quickly it is particular perverse to accept the rather devastating impact the proposals will have on designated conservation sites.
- The impact of sea level rise on the proposed site needs to be thoroughly examined in the light of the latest scientific projections on the impact of climate change.

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